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EMERGING MARKET MULTINATIONALS REPORT (EMR) 2019

EMERGING MARKETS: BUILDING CONSTRUCTIVE ENGAGEMENT

FINAL DRAFT



Emerging Markets Institute

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Preface

Three years ago, Drs. Lourdes Casanova and Anne Miroux, co-authors of the 2016 edition of the Emerging Market Multinational Report, asked me to write a preface. I offered up my own guiding principles about what distinguishes emerging markets (EMs) from others, which is that they are “underfunded growth opportunities with problems.” They have kindly asked me to write a preface again for this year’s 2019 edition of the report and, based on the current global environment, I have to double-down on the last two words – “with problems.” Indeed, the heightened market and economic turbulence stemming from currency woes starkly highlight some of the biggest problems they can face. The Federal Reserve has raised its key interest rates several times and market pundits see no end to their policy of normalization. Meanwhile, investors around the world are rethinking the proposition of taking active bets by investing in EMs to grab yields. It is what many call a “double whammy” of higher interest rates and a stronger dollar making the burden of debt for EMs (and the risk of default) that much more real.

The good news is that EM Multinationals are not sitting back during this wave of market turbulence. What we learn from Drs. Casanova and Miroux in this year’s report is that these multinational firms are continuing their ascension on the world stage as active global acquirers, as pursuers of further brand and product market differentiation, as those raising the bar on corporate governance practices, and especially how these firms are dealing uniquely with the challenges of digital transformation. The report does not shy away from recognizing what Drs. Casanova and Miroux call the “drastic changes that have taken place in the global economy since early 2018.” But there is a tone of optimism about what these important EM multinationals face in the midst of the uncertainty.

Whether you agree with this optimistic tone or not, I assure you the report will make you think in new ways about how heightened market turbulence in EMs matters for the world at large.

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As last year, members of the Emerging Market Research Network participated in the preparation of the Report: Limin Chen, professor from the School of Economics & Management at Wuhan University, for her research on state capitalism and technology influencing the growth of Chinese multinationals; Veneta Andonova, Associate Professor of Business, and Juana Catalina García Duque, Associate Professor, all from the School of Management, Universidad de los Andes, Colombia, contributed the chapter on social innovation in Latin America; Evodio Kaltenecker, Assistant Professor at EGADE Business School/Escuela de Negócios, and Miguel A. Montoya, Professor and Researcher at the School of Business of the Tecnológico de Monterrey, for their chapter on Mexican multinationals.

Finally, our special thanks go to the EMnet team at the OECD Development Center, a close partner of EMI for several years now, which has contributed to the present report.

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Abbreviations and Acronyms

AACSB	Association to Advance Collegiate Schools of Business
AMBA	Association of MBAs
BPM	Business Process Management
BRI	Belt and Road Initiative
BRICS	Brazil, Russia, India, China and South Africa
CARI	China-Africa Research Initiative
CDB	China Development Bank
CDEEE	Dominican Republic State Electric Utility
CNPC	National Petroleum Corporation
DOI	Degree of Internationalization
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
EQUIS	European Quality Improvement System
EMI	Emerging Markets Institute
eMNC	Emerging Multinationals
EMNET	OECD Development Centre's Emerging Markets Network
EMR	Emerging Markets Report
ESG	Environmental, Social and Governance requirements
FATA	Foreign Assets to Total Assets
FDI	Foreign Direct Investment
FDI RRI	Foreign Direct Investment Regulatory Restrictiveness Investment
FERE	Foreign Employees to Total Employees
FSTS	Foreign Sales to Total Sales
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GEIDCO	Global Energy Interconnection Development and Cooperation Organization
GEGI	Global Economic Governance Initiative
GFC	Global Financial Crisis
GII	Global Innovation Index
GICS	Global Industry Classification Standard
GSM	Global System for Mobile Communications
HACCP	Hazard Analysis and Critical Control Points
HCBM	Human-Centered Business Model
IB	International Business
ICT	Information & Communication Technology
IDB	Inter-American Development Bank
IEA	International Energy Agency

IMF International Monetary Fund
INST-OUT Outer institutions
LAC Latin America and the Caribbean
M&As Mergers and Acquisitions
MDGs Millennium Development Goals
MNE Multinational Enterprise
NAFTA North American Free Trade Agreement
NOC Number of countries hosting overseas subsidiaries
NOS Number of overseas subsidiaries
OECD Organisation for the Economic Cooperation and Development
OFDI Outward Foreign Direct Investment
OSTS Overseas Subsidiaries to Total Subsidiaries
PBX Private Branch Exchanges
PPP Purchasing Power Parity
RBC Responsible Business Conduct
RES-IN Inner Resources
RES-OUT Outer Resources
RES-OUT-RAW Raw material-seeking
RES-OUT-TECH Technology-seeking outer resources
ROA Return on Assets
ROE Return on Equity
ROS Return on Sales
S&T Science and Technology
SAIS Johns Hopkins University School of Advanced International Studies
SDGs (United Nations) Sustainable Development Goals
SOE State-Owned Enterprise
SMEs Small and Medium-size Enterprises
STEM Science, Technology, Engineering & Mathematics
TPA Trade Promotion Authority
UN United Nations
USMCA United States-Mexico-Canada trade agreement
WB World Bank
WCDMA Wide-Band Code Division Multiple Access
WTO World Trade Organization

Executive Summary

Chapter 1—The era of Chinese multinationals

This chapter documents the rise of Chinese multinationals as measured by their presence on the 2019 Fortune Global 500 rankings. With 119 companies in the 2019 Fortune Global 500, China is almost at par with the U.S., which has 121 companies on the list. This is a show of force for the Chinese domestic market and the ecosystem it has spawned. South Korean companies have also shown great success, but the rest of emerging market multinationals (eMNCs) have grown less impressively. We explore the specific firms which drive foreign direct investments (FDI) from emerging market countries and compare them to developed markets such as the U.S. and Japan. The chapter also describes innovation leadership from emerging markets. Companies from several emerging markets, including China and India, are now becoming formidable competitors on the global stage. We conclude the chapter by honing in on Huawei, one of the most innovative Chinese companies.

Chapter 2—Revisiting China and the E20

Chapter 2 examines trends in emerging economies as illustrated by the E20—a group composed of 20 top emerging economies that EMI established in its first Emerging Market Multinationals Report (EMR) to illustrate the emerging market phenomenon. In 2018, global growth recovery did not live up to expectations. Among a global slowdown, largely reflecting poor performance in advanced economies, the E20 as a whole also registered a small decline in its growth rate. As well, outward FDI from the E20 registered a slight decline while inward FDI remained relatively stable. The chapter highlights the pervasive uncertainty resulting from trade tensions that have continued virtually unabated since early 2018, and their major destabilizing impact on the global economy. As mentioned in the EMR last year, in the long term, the sustained loss of confidence in the rule-based global trade system stemming from the trade war is even more damaging than the economic losses by themselves.

Chapter 3—The Global South: Chinese Investments in Latin America and Africa

Chapter 3 explores the rise of the global South through the rising economic engagement of China in Latin America and Africa. The rise of Chinese FDI on both continents is particularly illustrative of this trend. While almost two thirds of China's outward foreign direct investment (FDI) stock is still invested in Asia alone, Latin America and Africa have provided fertile ground for the significant overseas expansion of Chinese multinationals. The chapter highlights the data challenges inherent to Chinese OFDI and overseas lending. Based on a variety of sources, it examines trends in China's outward FDI and lending to these regions. Overall, in Latin America and the Caribbean, Chinese OFDI has come to play a major role, being at par or even exceeding Chinese lending to the continent on

several occasions. Though lending does not dominate the picture as it does in Africa, in some years China has been the largest source of development finance for Latin America, even surpassing that of major development banks. In Africa, lending remains the most important mode of finance from China; yet, for Africa, China is also a key investment partner.

Chapter 4—State capitalism or technology springboard: Chinese multinationals influenced by both institutions and resources

As Chinese outward direct investment (OFDI) has increased for 16 consecutive years, analysts have sought to determine the driving factors behind this massive growth. The stock of Chinese OFDI ranked No. 2 in 2017, behind only the U.S. This paper integrates an institution-based view and a resource-based view to investigate the impacts on Chinese multinationals from four aspects: Inner resources (firms' resource and capability), outer resources (resource-seeking motivation), inner institutions (ownership of firms), and outer institutions (sub-national institutional environment). We analyzed data from Chinese listed firms from 2009-2017 and obtained the following results: (1) Inner resources, outer resources, and outer institutions all have positive impacts on the internationalization of Chinese firms. However, inner institutions have a negative effect, i.e., state-owned enterprises (SOEs) have a lower percentage of internationalization and lower mean degree of internationalization (DOI) than private firms. (2) Institutions and resources not only have a direct impact on internationalization and performance, but also significantly moderate their relationship. Though private firms performed better than SOEs, SOEs' performance improved with higher DOI. This paper found that expanding internationally can help firms improve performance despite institutional flaws in the home country. Some research has asserted that institutional factors caused this phenomenon, and that it is the result of state capitalism, reflecting the will of the Chinese government. Other research points to resource factors: Internationalization is a springboard for Chinese firms to satisfy their technology-seeking motivations (Luo & Tung, 2007, 2018). With China's rapid development in recent years, overseas acquisitions have become increasingly necessary to meet the raw material needs of Chinese enterprises.

Chapter 5—Mexican multinationals

Mexico is the second-largest economy in Latin America. In 2018, Mexico's population peaked at 125.929 million people (Mexico, n.d.), the 11th most populous country in the world (The World Factbook, 2018). Its 2018 nominal Gross Domestic Product (GDP) and Purchasing Power Parity (PPP) reached \$1.15 trillion and \$2.45 trillion respectively (Silver, 2019), with a projected real GDP change of 0.9% (Mexico GDP Annual Growth Rate, n.d.). Among its many particularities, two-thirds of Mexico's exports are manufactured, totaling \$419 billion (Mexico Total Exports, n.d.), with much of Mexico's industrial base firmly connected to the U.S.-based manufacturing value chains (Kaltenecker, 2018).

Chapter 6—Social innovation in Latin America

Latin American countries, like many other emerging economies, face serious challenges. Climate change, as well as persistent inequality and violence force millions of people and businesses throughout the region to live in a constant state of uncertainty. Consequently, private firms from the region have taken the initiative to experiment with business models that create value beyond the economic dimension, producing a positive social and environmental impact. In this chapter, we provide an overview of the concept of social innovation, highlight its increasing relevance for businesses in Latin America and we provide an overview of five significant regional case studies.

Chapter 7— Better business for 2030— Putting the SDGs at the core

An increasing number of firms recognize that making sense of the Sustainable Development Goals (SDGs) makes business sense. The Organisation for Economic Co-operation and Development (OECD) is committed to leveraging its capacity and expertise in a wide range of areas, from data collection to dialogue and peer-learning. This chapter explores ways in which the private sector can contribute to the SDGs by putting them at the center of decision-making. The analysis builds on the work of the OECD Development Centre’s business platform Emerging Markets Network (EMnet).

Chapter 1

The era of Chinese multinationals

- 1.1. The rise of Chinese multinationals
- 1.2. Greenfield investments
- 1.3. Innovation leadership from emerging markets
- 1.4. Case Study: Huawei, a 5G champion

Executive Summary

This chapter documents the rise of Chinese multinationals as measured by their presence on the 2019 Fortune Global 500 rankings. With 119 companies in the 2019 Fortune Global 500, China is almost at par with the U.S., which has 121 companies on the list. This is a show of force for the Chinese domestic market and the ecosystem it has spawned. South Korean companies have also shown great success, but the rest of emerging market multinationals (eMNCs) have grown less impressively. We explore the specific firms which drive foreign direct investments (FDI) from emerging market countries and compare them to developed markets such as the U.S. and Japan. The chapter also describes innovation leadership from emerging markets. Companies from several emerging markets, including China and India, are now becoming formidable competitors on the global stage. We conclude the chapter by honing in on Huawei, one of the most innovative Chinese companies.

Chinese companies taking the lead^①

Emerging market multinational corporations (eMNCs) are companies headquartered in an emerging market and operating in another country in addition to its own, as defined by UNCTAD and in previous reports. In this chapter, we use the Fortune Global 500 rankings (started in 1990) to compare the performance of eMNCs with their peers from developed countries. The richness of the longitudinal data contained within the Fortune Global 500 dataset allows us to compare firms along a number of dimensions including revenues, profits, assets, equity and number of employees.

Similar to the analysis in prior EMI Reports (Casanova and Miroux, 2016, 2017, and 2018), this chapter focuses on the largest eMNCs, as they have a disproportionately high impact on their economies. We contend that a

^① We gratefully acknowledge the help of Daniel dos Anjos for assistance with data analytics.

diversified local private sector, committed to the development of its home country, drives much of the growth behind the success of emerging markets. These companies fuel the creation of more stable and better-paid jobs, provide resources to conduct research and foster innovation, as well as contribute to the development of small- and medium-sized companies.

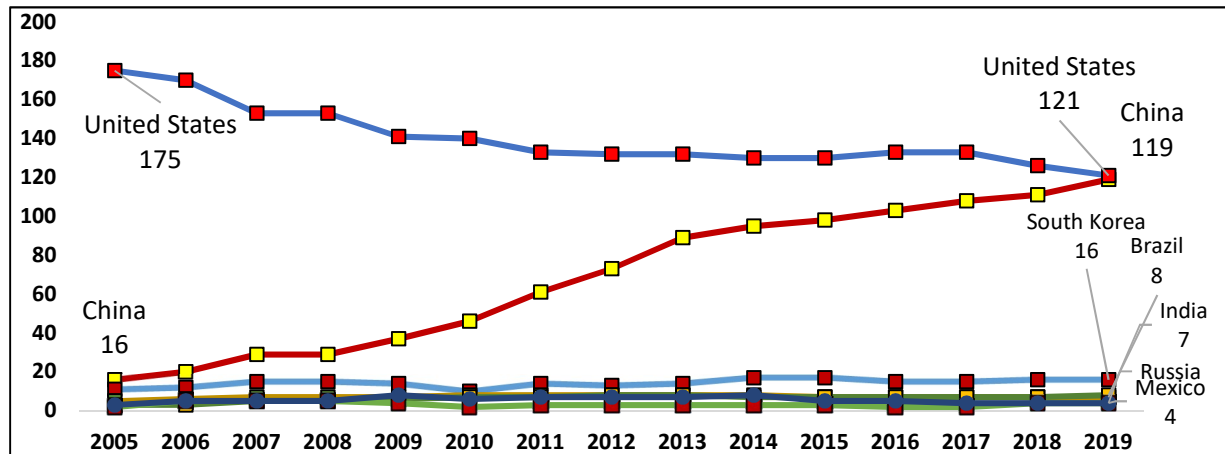
This chapter first describes the rise of Chinese multinationals as measured by their presence on the 2019 Fortune Global 500 rankings. It explores the specific firms that turbocharge FDI from emerging market countries and compares them to developed markets such as the U.S. and Japan. The chapter concludes with a description of innovation leadership from emerging markets, in particular the case of Huawei, the most emblematic of Chinese firms in innovation, global reach, and impact, as demonstrated by its visibility in the press.

1.1. The rise of Chinese multinationals

In 2019, the Fortune Global 500 comprised companies from 34 countries with revenues of \$32.7 trillion and profits of \$2.15 trillion generated by 69.3 million employees. Only 21 countries had more than one company listed in this important ranking.

Nearly half of the companies in the list were headquartered in either the U.S. or China: the former hosted 121 companies, followed closely by the latter with 119 companies, 24.2% and 23.8% of the Fortune Global 500 respectively. In **Figure 1.1**, we see that U.S. representation steadily dropped from about 175 companies almost 10 years ago to 121 companies today. Meanwhile, China’s presence first surged in 2005 accelerated after the Global Financial Crisis (GFC) of 2008, and is now on the heels of the U.S. Since 2005, Korea has retained 16 companies in the ranking. However, other major E20 countries like Brazil, Mexico and India have not grown similarly during this period.

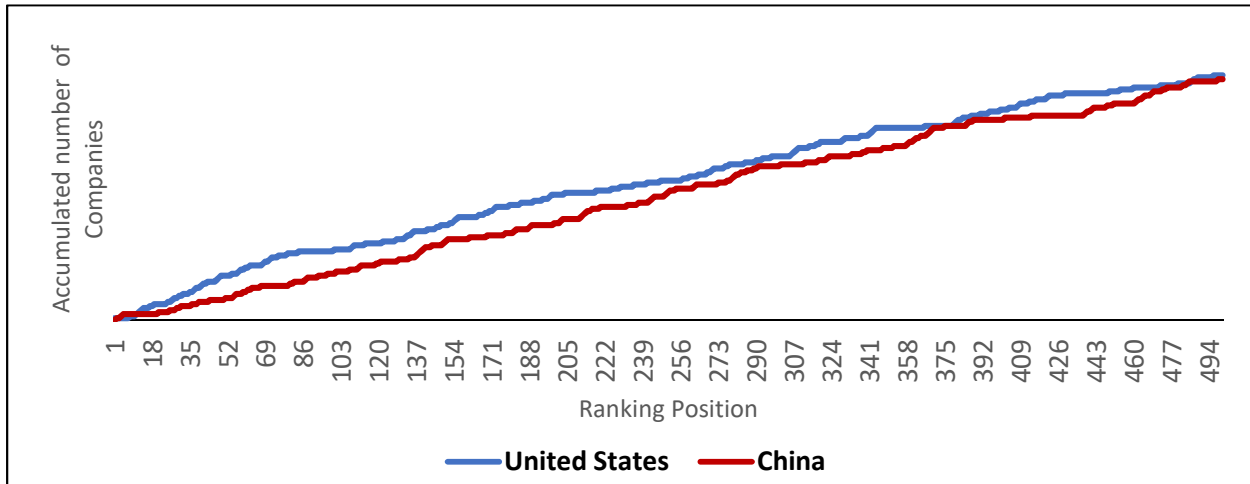
Figure 1.1. Growth in representation on Fortune Global 500 (2005-18)



Source: Authors’ analysis based on 2019 Fortune Global 500 data 2005- 2019, <https://fortune.com/global500/2019/>, accessed August 2019.

While the total number of Chinese firms has increased over the last decade, American firms in general are consistently ranked higher overall as shown in **Figure 1.2**.

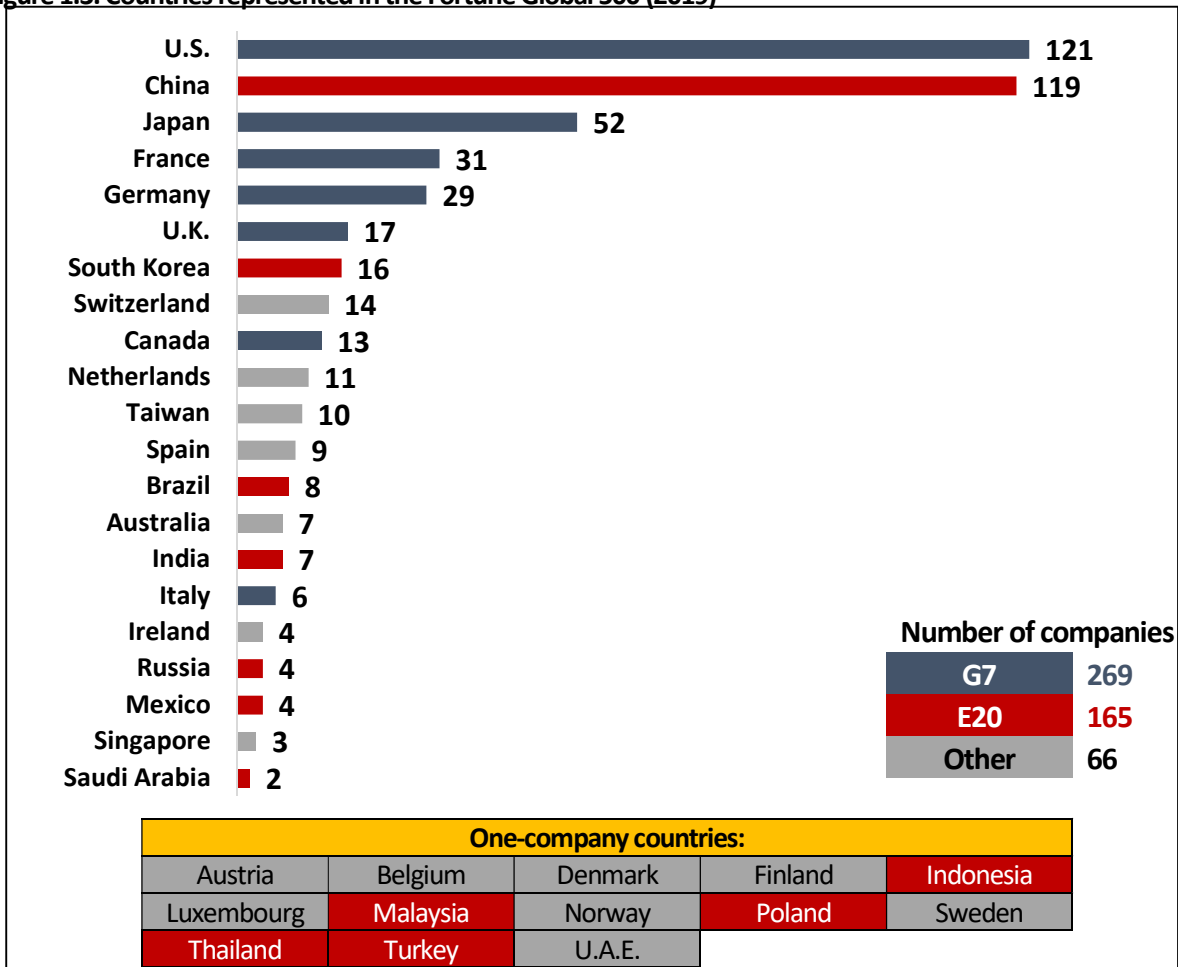
Figure 1.2. U.S. and China: Distribution of number of companies 2019 Fortune Global 500



Source: Author’s analysis based on Fortune Global 500 data, accessed July 2019.

Figure 1.3 provides a more comprehensive picture of the 34 countries included in the ranking. G-7 economies continue to lead relative to E20 countries, with the significant exception of China (2nd) and, to a lesser extent, South Korea (7th with 16 companies). Brazil, in spite of the economic recession, has moved from seven to eight companies, India claims seven, Mexico and Russia with four and Saudi Arabia has qualified to the E20 representation with more than one. Nearly a third (155 firms) of the Fortune Global 500 are E20 firms, and about 20% are Chinese. More than half of the E20 are home to companies in the Fortune Global 500, although most, Indonesia, Malaysia, Poland, and Thailand, are represented by just one. As Figure 1.1 through **Figure 1.3** show, China is the only E20 country that steadily increased its number of companies in the Global 500 over the last few years, from 98 in 2015, to 103 in 2016, 108 in 2017 and 111 in 2018. Relative to other countries, China and Korea both have a higher number of companies in the Fortune Global 500 proportional to the size of their economies (GDP).

Figure 1.3. Countries represented in the Fortune Global 500 (2019)



Source: Authors' analysis based on 2019 Fortune Global 500 data, <https://fortune.com/global500/2019/>, accessed August 2019.

Compared to last year, six Chinese companies have risen in the rankings, six have dropped and four held their positions. Two Russian companies, Gazprom and Lukoil, and Brazil's Petrobras have all improved their rankings, despite both countries having suffered currency devaluations with respect to the dollar; Korea's Samsung also improved its rank. Of the 50 biggest emerging markets multinationals (see Appendix 1.1.), 70 are headquartered in China, eight in South Korea, six in India, five in Brazil, four in Russia, two in Mexico and Saudi Arabia, and one in each of Indonesia, Malaysia and Thailand.

Table 1.1 ranks major industries by their representation of companies. The three last columns show the share of the number of companies from the E20 and G-7 regions. For example, 77% of the companies in the Mining and Crude-Oil Sector come from E20 countries as compared to 14% from the G-7. A quick glance through Table 1.1 confirms the prominence of eMNCs. In six sectors, E20 companies dominate their G-7 counterparts, and in two other key sectors, Electronics & Electrical Equipment and Aerospace and Defense, they rival those from G-7 countries.

Table 1.1. Top-21 industries among 2019's Fortune Global 500, according to Fortune's criteria of classification, in number of companies

	Industry	Companies	Average of Revenue (\$ Million)	E20	G-7	Other
1	Banks: Commercial and Savings	54	58,997	33%	48%	19%
2	Motor Vehicles and Parts	34	84,296	32%	65%	3%
3	Petroleum Refining	32	119,184	44%	38%	19%
4	Mining, Crude-Oil Production	22	67,011	77%	14%	9%
5	Insurance: Life, Health (stock)	20	66,262	30%	60%	10%
6	Transportation*	20	47,447	20%	70%	10%
7	Metals	19	62,486	74%	21%	5%
8	Trading	19	63,316	63%	32%	5%
9	Food and Drug Stores	18	54,858	0%	72%	28%
10	Insurance: Property and Casualty (Stock)	17	77,185	6%	71%	24%
11	Telecommunications	16	68,828	25%	69%	6%
12	Utilities	16	67,338	31%	56%	13%
13	Electronics, Electrical Equip.	15	49,446	40%	47%	13%
14	Aerospace and Defense	14	72,935	43%	50%	7%
15	Engineering, Construction	12	44,227	67%	25%	8%
16	Specialty Retailers	11	55,108	27%	64%	9%
17	Pharmaceuticals	11	36,701	18%	64%	18%
18	Insurance: Life, Health (Mutual)	11	69,560	27%	64%	9%
19	Diversified Financials	9	69,788	22%	67%	11%
20	Computers, Office Equipment	9	56,435	11%	56%	33%
21	Energy	9	50,259	50%	39%	11%

* Transportation includes Airlines, Mailing, Railroads, and Shipping.

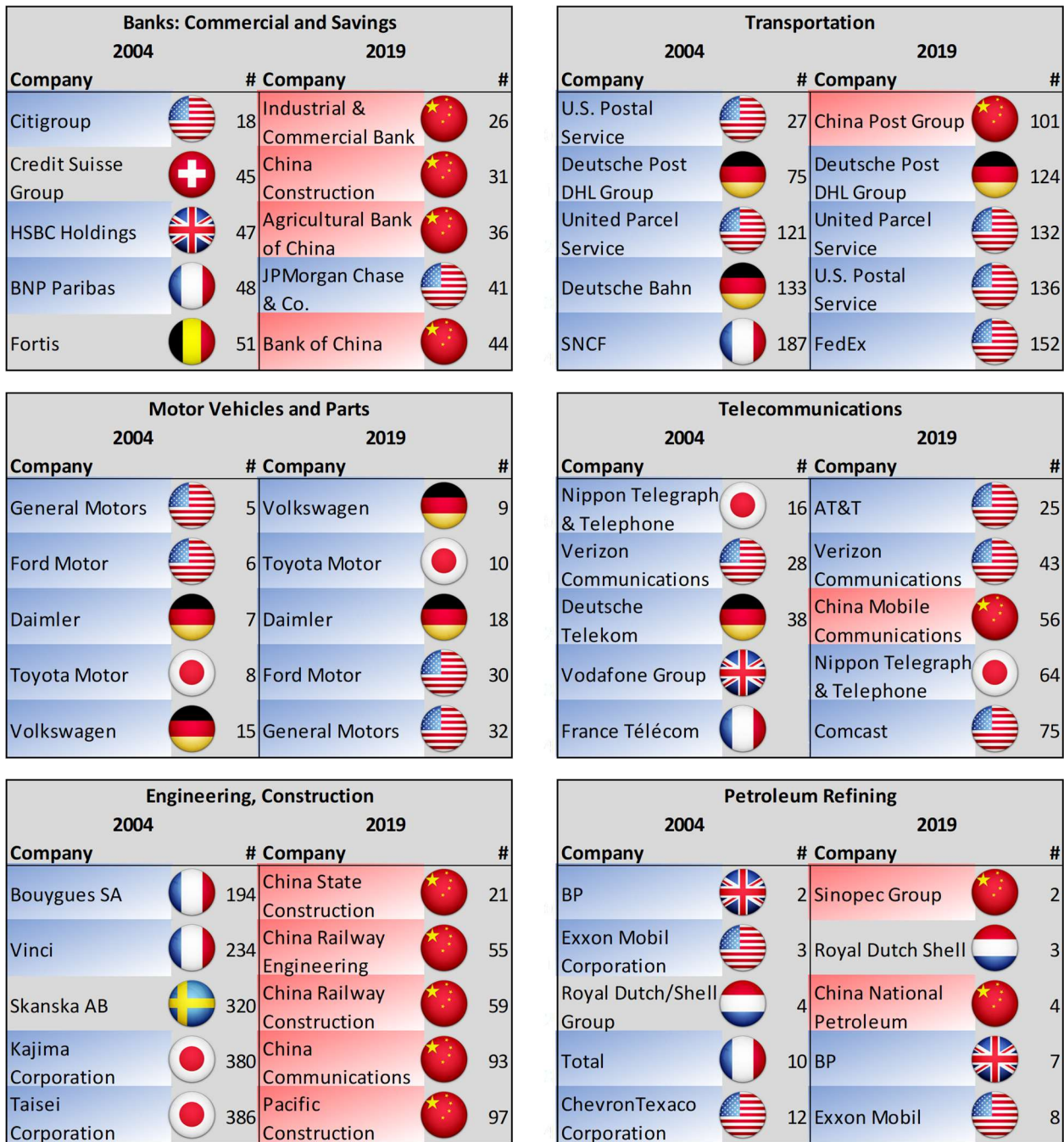
Source: Author's information based on Fortune Global 500 data, accessed annually, most recently in July 2019.









Building on the previous three EMI reports, **Figure 1.4** lays out the top five companies in each of the eight most represented industries in the Fortune Global 500 and also includes two strategic sectors: Telecom and Engineering, whose current landscape confirms the global leadership position attained by Chinese firms. In 2016, three E20 firms qualified for this group, but by 2019 more than half of the companies were from emerging economies, and China's 18 firms exceeded any other country's representation. Chinese Engineering and Construction companies are particularly prominent, occupying all five top positions. China also dominates Banking with four of the top five positions by assets, and has top positions in all industries except for Motor Vehicles, which is firmly dominated by companies from the G-7 countries.

Looking at the Banking sector, for example, none of the five top-ranked firms in 2004 appear in the top five in 2019. The same complete change occurred in Mining, Crude-Oil, and Metals. However, it is worth noting that for the latter two sectors, the position of the top ranked eMNCs is higher on the Fortune Global 500 in 2019 than in 2004.











Motor Vehicles stands out in not having any eMNC amongst its top five firms; though the firms' rankings changed, the same entities continue to dominate the top five rankings in 2019.











Figure 1.4. Top five companies in 2004 and 2019 across different industries in the Fortune Global 500



Mining, Crude-Oil Production			
2004		2019	
Company	#	Company	#
Anglo American 	275	Saudi Aramco 	6
BHP Group 	341	Glencore 	16
RAG Aktiengesellschaft 	371	China National Offshore Oil 	63
		Pemex 	95
		China Energy Investment 	107

Metals			
2004		2019	
Company	#	Company	#
Arcelor 	148	China Minmetals 	112
Nippon Steel Corporation 	182	Amer International 	119
Norsk Hydro ASA 	199	ArcelorMittal 	120
JFE Holdings, Inc. 	227	China Baowu Steel Group 	149
Alcoa, Inc. 	229	POSCO 	171

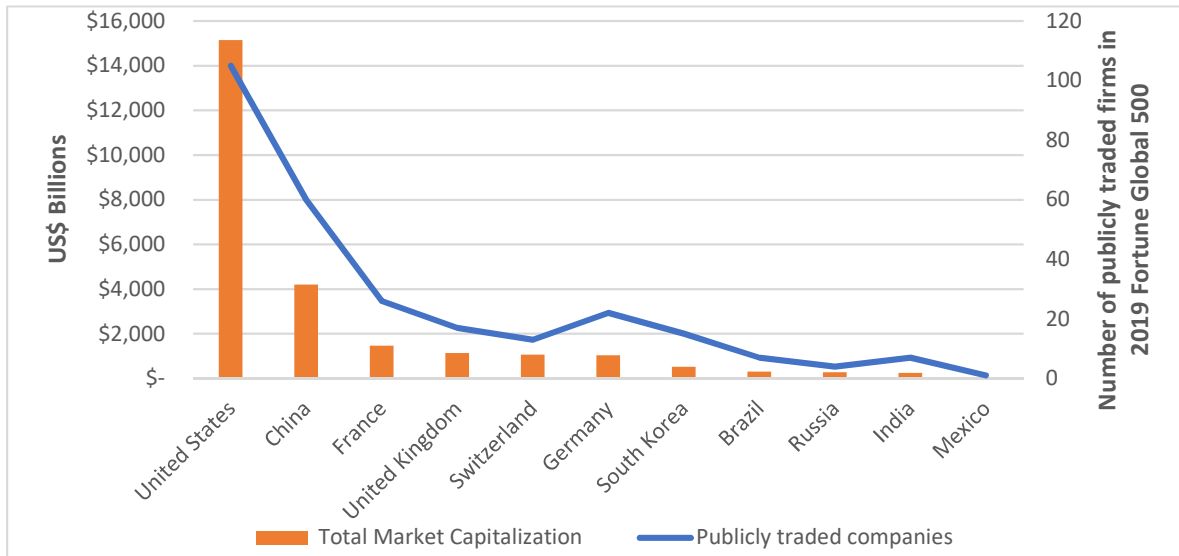
Insurance: Life, Health (stock)			
2004		2019	
Company	#	Company	#
AXA 	13	Ping An Insurance 	29
ING Group 	17	Allianz 	45
Assicurazioni Generali 	29	AXA 	46
Aviva 	42	China Life Insurance 	51
MetLife 	106	Japan Post Holdings 	52

Trading			
2004		2019	
Company	#	Company	#
E.ON 	67	Trafigura Group 	22
Mitsui 	177	Mitsubishi 	33
Marubeni 	196	Itochu 	65
Sinochem Corporation 	270	Sinochem Group 	88
Itochu Corporation 	348	COFCO 	134

Source: Author's information based on Fortune Global 500 data, accessed annually, the most recent in July 2019.

Figure 1.5 shows the aggregate market capitalization of publicly traded Fortune 500 companies for selected countries as drawn from the Forbes Global 2000. While the number of Chinese firms in the Fortune Global 500 is comparable to those from the U.S., the U.S. firms' market capitalization is much higher, a consequence of the different ownership structures of U.S. and Chinese firms. A much higher proportion of U.S. firms is publicly listed, while nearly 50% of the Chinese firms are state-owned. The total market capitalization in many E20 markets such as Brazil, Russia, India and Mexico continues to substantially lag G-7 countries.

Figure 1.5. Total market capitalization by country versus number of public companies from those countries in 2019 Fortune Global 500



Source: Authors based on data from Bloomberg Intelligence, Capital IQ and Forbes Global 2000, accessed August 2019.

Table 1.2 compares the top 10 companies by market capitalization in 2004 and 2019. In 2004, the list of ten largest companies was dominated by banking, Healthcare and Oil and Gas companies from the U.S. and the U.K. with no Chinese companies present. The list is now topped by Tech companies from the U.S., and China’s Alibaba and Tencent. Banking and Healthcare are relegated to a secondary role, and Oil companies no longer rank.

Table 1.2. List of public corporations 2004 vs. August 2019

	2004			2019		
	Company	Country	Market Cap (\$bn)	Company	Country	Market Cap (\$bn)
1	GENERAL ELECTRIC	U.S.	386.4	MICROSOFT CORP	U.S.	1,040.0
2	EXXON MOBIL CORP	U.S.	328.1	APPLE INC	U.S.	933.2
3	MICROSOFT CORP	U.S.	310.2	AMAZON.COM INC	U.S.	886.7
4	CITIGROUP INC	U.S.	250.3	ALPHABET INC-A	U.S.	817.1
5	WALMART INC	U.S.	232.2	FACEBOOK INC-A	U.S.	524.1
6	BP PLC	U.K.	209.5	BERKSHIRE HATH-A	U.S.	490.2
7	PFIZER INC	U.S.	201.0	ALIBABA GRP-ADR	China	454.6
8	BANK OF AMERICA	U.S.	190.2	TENCENT	China	410.2
9	JOHNSON&JOHNSON	U.S.	188.4	VISA INC-CLASS A	U.S.	353.6
10	HSBC HOLDINGS PL	U.K.	188.1	JOHNSON&JOHNSON	U.S.	346.7

Source: Authors based on Bloomberg terminal data, accessed August 2019.

1.2. Greenfield investments

For this year's report, using data from fDi Markets,^② we compare the greenfield investments from the U.S., China, and other emerging markets. In previous reports, we focused on M&As, but in this edition, we turn to greenfield which has proven equally consequential in terms of investment footprint. **Table 1.3** presents the total amount of capital invested by selected countries between January 2003 and June 2019. U.S. companies lead the group having invested \$1.7 trillion since 2003 in greenfield projects abroad. Chinese companies rank second, but their total amount invested is less than half than their U.S. peers. Despite this gap, greenfield FDI investments of Chinese companies now exceed those of Japanese firms and are almost three times the value invested by Indian firms.

Table 1.3. Total value of announced international greenfield projects by selected countries, between January 2003 and June 2019 \$ million

Ranking	Country	Total value (\$ million)	Number of projects
1	U.S.	1,743,286	38,529
2	China	849,807	7,476
3	Japan	685,681	10,834
4	Germany	625,446	13,735
5	U.K.	622,670	16,333
6	France	489,421	8,980
7	Spain	331,635	5,362
8	South Korea	329,902	3,002
9	Canada	317,960	4,552
10	U.A.E.	316,139	2,476

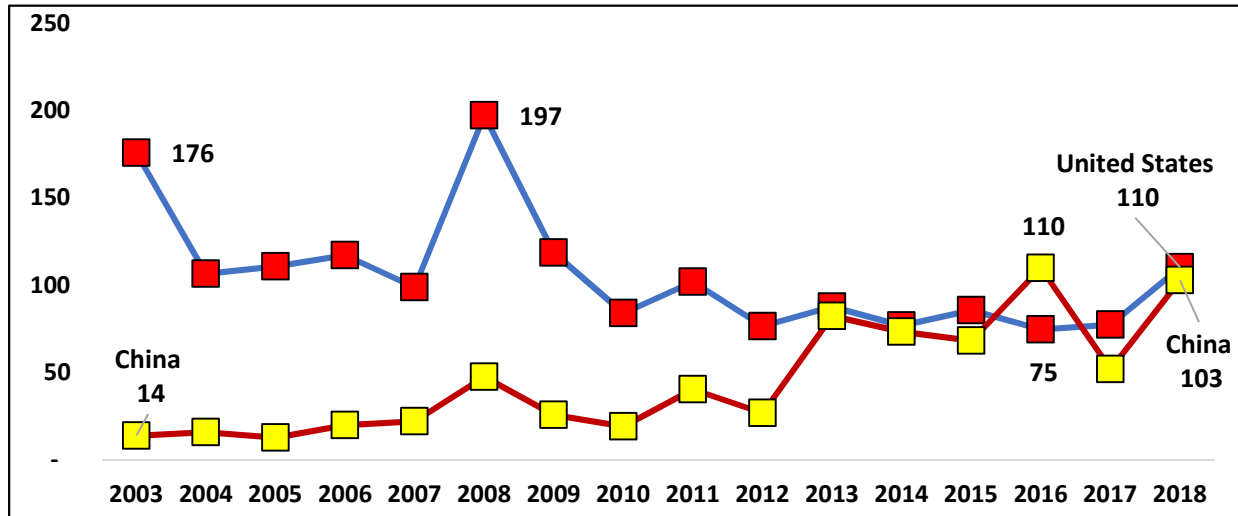
Source: Author's analysis based on data from fDi Markets by Financial Times, accessed August 20, 2019.

Figure 1.6 depicts the annual changes in international greenfield projects by firms from selected countries. Other than in 2016, the U.S. has visibly led every year. Since 2013, Chinese companies have significantly increased their investments in international greenfield projects and now closely track U.S. firms, even exceeding the U.S. levels in 2016. Two other E20 countries demonstrate strong influence abroad: South Korea and Russia. South Korea's overseas greenfield investments rival Japan's. The **Figure 1.7** depict monthly the international greenfield projects by the same group of countries for the first semester of 2019.

^② fDi Markets data reflects the value of announced greenfield projects. The data is updated regularly and projects that are cancelled are removed. Although this indicates trends and values, it is an approximation.

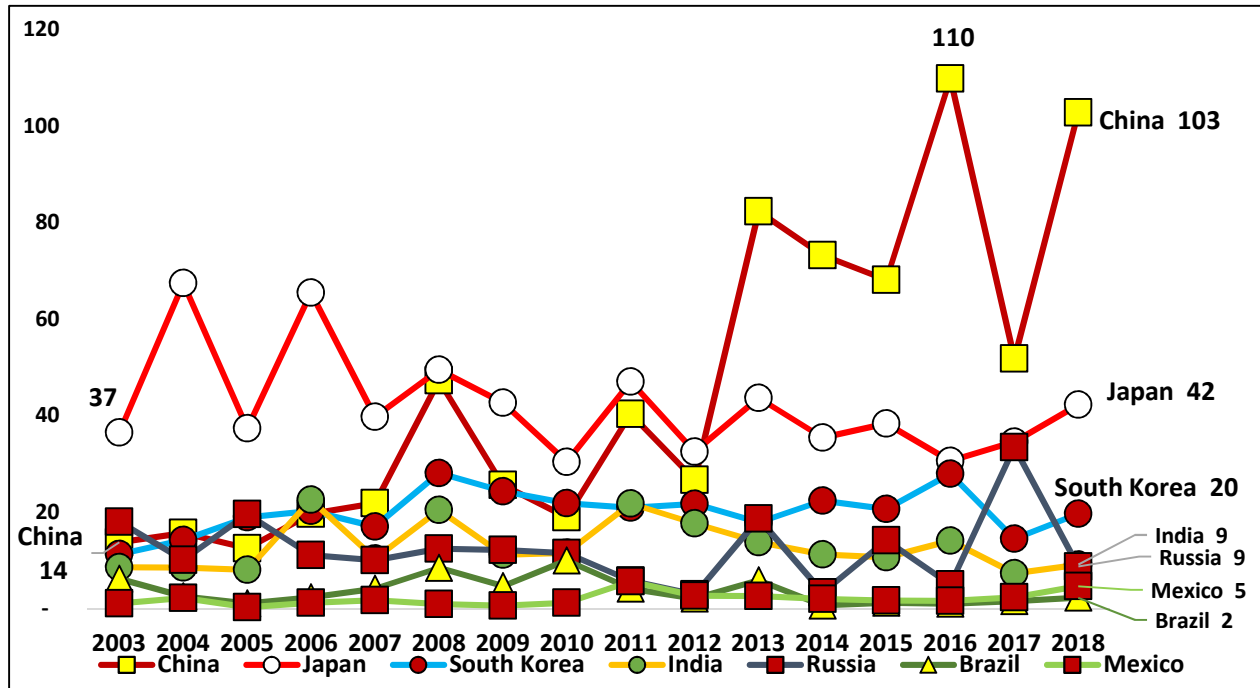
Figure 1.6. Total value of announced international greenfield projects abroad by selected countries (USD millions)

Figure 1.6 a. By the U.S. and China



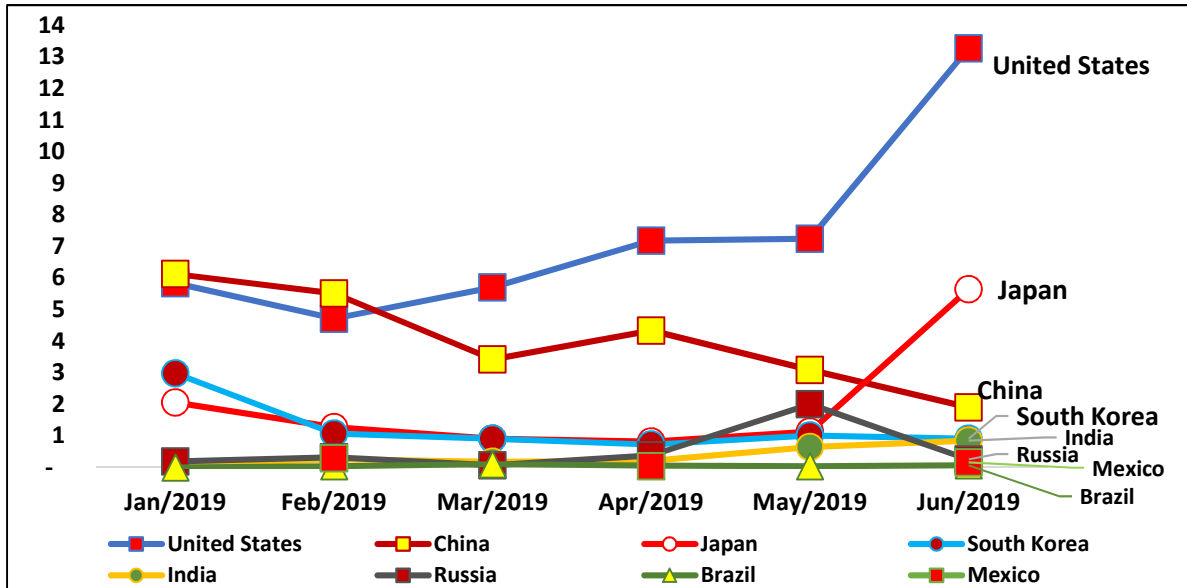
Source: Authors based on data from Financial Times fDi Markets, accessed August 2019.

Figure 1.6 b. By China, Japan, South Korea, India, Russia, Mexico and Brazil



Source: Authors based on data from Financial Times fDi Markets, accessed August 2019.

Figure 1.7. January-June 2019 Monthly value of announced international greenfield investments 2019, by selected countries in fDi Markets database (USD millions)



Source: Author’s information based on data on fDi Markets by Financial Times, accessed annually, the most recent in August 2019.

In 2019, based on data published by fDi Markets (**Figure 1.7**), the U.S. and Japan pushed ahead in the first six months of the year, while China has receded. It is too early to say whether this reflects the beginning of a new trend or is temporary, and whether or not this is the result of the U.S.-China trade war and increasing scrutiny in Europe and the U.S. of Chinese investments.

In Table 1.4, we look at the average number of countries in which E20, U.S. and Japanese companies have announced greenfield projects since 2003. The results indicate that a sizable number of E20 firms, mainly in China and India, have announced international greenfield investments. Though these firms announced projects in fewer countries than Japanese or U.S. firms, they are not far behind. China leads the E20 with a presence in 153 countries, followed by India with 139, Korea with 121 and Russia with 116.

Table 1.4. Aggregated comparison information about greenfield projects by selected countries 2003-2018

Country	No. of firms w. greenfield projects	No. of countries with greenfield projects	Average no. of countries / firm	Average no. of greenfield projects / firm	Average capital invested/firm (mm USD)	Average capital invested/project (mm USD)
U.S.	12,270	184	2.3	3.1	142.1	45.2
China	2,660	153	2.0	2.5	284.0	113.3
Japan	1,981	129	3.1	5.3	346.2	63.3
South Korea	842	121	2.1	3.9	391.8	109.9
India	1,339	139	2.3	3.1	156.8	51.8
Russia	602	116	2.3	3.4	334.0	106.7
Brazil	344	84	1.8	2.9	173.1	77.6
Mexico	168	52	1.9	3.2	203.0	74.9

Source: Author’s information based on data on fDi Markets by Financial Times, accessed annually, the most recent in August 2019.

Table 1.4 provides further details on the foreign greenfield investments made by firms from selected countries. Nearly four times as many U.S. firms have invested in overseas greenfield projects as compared to their Chinese counterparts, but U.S. firms invest less on average in each overseas greenfield project as compared to peer firms from China, Japan and Korea. Japanese firms also stand out for having the highest number of average overseas greenfield investments per firm.

The main destinations for foreign greenfield investments are depicted in **Table 1.5**. While China (14%) and India (7%) are the two most important targets for U.S. companies, Chinese firms focus most on Indonesia (9%) and the U.S. (7%). Meanwhile, China dominates as the target of Japan's and Korea's investments. In short, the U.S. and China remain central in the reception of investments flows.

Table 1.5. Main country destinations (50%) of announced greenfield investments 2003-2018

Main destinations / capital in million US\$ / share for the source					Main destinations / capital in million US\$ / share for the source					
U.S.	1.	China	251,836	14%	China	1.	Indonesia	66,215	9%	
	2.	India	122,875	7%		2.	U.S.	53,954	7%	
	3.	Australia	115,571	7%		3.	India	49,063	6%	
	4.	U.K.	106,574	6%		4.	Nicaragua	40,311	5%	
	5.	Canada	81,439	5%		5.	Russia	31,708	4%	
	6.	Mexico	79,655	5%		6.	Malaysia	30,116	4%	
	7.	Brazil	55,023	3%		7.	Egypt	28,675	4%	
	8.	Japan	43,049	2%		8.	Philippines	24,726	3%	
	9.	Saudi Arabia	41,193	2%		9.	U.K.	21,852	3%	
Japan	1.	China	120,542	18%		South Korea	1.	China	75,654	23%
	2.	Australia	65,600	10%			2.	Vietnam	52,297	16%
	3.	U.S.	59,983	9%	3.		U.S.	28,154	9%	
	4.	Vietnam	46,445	7%	4.		India	23,620	7%	
	5.	India	40,928	6%	Russia	1.	Egypt	30,979	15%	
	6.	Indonesia	40,158	6%		2.	Germany	16,331	8%	
1.	U.A.E.	27,792	13%	3.		Kazakhstan	11,854	6%		
2.	U.S.	11,006	5%	4.		Uzbekistan	11,033	5%		
3.	China	10,477	5%	5.		Jordan	10,102	5%		
4.	Indonesia	9,200	4%	6.		China	9,107	5%		
5.	Australia	8,948	4%	7.		Vietnam	8,478	4%		
6.	Bangladesh	8,258	4%	8.		Syria	6,056	3%		
7.	Mozambique	8,176	4%	Mexico	1.	U.S.	7,724	23%		
8.	U.K.	7,287	3%		2.	Brazil	5,589	16%		
9.	Turkey	6,936	3%		3.	Peru	4,771	14%		
10.	Oman	6,431	3%							
11.	Nigeria	6,263	3%							
Brazil	1.	Colombia	8,904		15%					
	2.	U.S.	4,085		7%					
	3.	Venezuela	3,964	7%						
	4.	Argentina	3,884	7%						
	5.	Malaysia	3,720	6%						
	6.	Mexico	3,706	6%						
	7.	Canada	2,934	5%						

Source: Author's information based on data on fDI Markets by Financial Times, accessed annually, the most recent in August 2019.

Table 1.6 presents a deeper look at the top 20 firms in selected countries that represent the bulk of announced international greenfield investments. The top three firms account for half of foreign greenfield investments for Brazil (Vale, Petrobras and Odebrecht), Mexico (América Móvil, Grupo México and Cemex) and Russia (Rosatom, Gazprom and Lukoil). Conversely, in the U.S., China, India, and Japan the overseas greenfield investments are more evenly spread across top firms. The former group shows vulnerability due to the lack of diversification, while the latter (U.S. and China mainly but also India and Japan) proves more resilient to economic shocks. As an example, corruption scandals crippled both Odebrecht and Petrobras, and the Brumadinho dam tragedy profoundly affected Vale, causing a collapse in Brazil’s total international investment level.

Firms from traditional industries such as Oil, Hotels, and Technology dominate the American top 10. For China, it is significant that Huawei appears as one of the top companies by the total value of its announced greenfield investments between 2003 and 2019. Other top Chinese companies ranked by greenfield investment are in Oil, but also Construction, Hotels and Electricity.

Table 1.6. Top-20 companies by each selected country according to total of capital invested in greenfield projects since 2003-2018

#	U.S.	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	Chevron Corporation	118,919	76	30	7%	28			
2	ExxonMobil	76,554	90	41	4%	8		1,400	9
3	General Electric (GE)	33,211	397	72	2%	48	3	3,035	
4	ProLogis	32,036	165	28	2%			66	
5	Dow Chemical	27,592	105	37	2%		21		
6	Intel	27,278	155	43	2%	135			
7	Marriott International	27,093	227	59	2%		785	208	1,328
8	Amazon.com	23,381	370	44	1%	13	548	28	
9	General Motors (GM)	20,987	125	36	1%	32	8		
10	Starwood Hotels & Resorts	19,317	145	41	1%				
11	Ford	16,822	107	33	1%	30		200	8
12	IBM	16,245	540	80	1%	114			
13	AES Corporation (AES)	16,228	39	24	1%		1		
14	Microsoft	13,105	336	77	1%	60	18	38	
15	Coca-Cola	12,995	128	50	1%	395		682	19
16	Apache	11,695	14	5	1%				
17	SunEdison Inc (MEMC Electronic Materials)	11,439	41	15	1%				
18	Hilton Hotels (Hilton Worldwide)	11,026	121	41	1%		180	180	
19	Citigroup	9,840	234	53	1%	71	26	42	
20	Carlson Companies	9,355	105	43	1%			179	
Total top-20		535,117	3,520		31%				

#	China	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	Hong Kong Nicaragua Canal Development ^③	40,000	1	1	5%				
2	China National Petroleum (CNPC)	26,567	50	27	4%	4		6	
3	China Fortune Land Development (CFLD)	26,405	5	5	3%		5		
4	Power Construction Corporation of China	21,985	8	7	3%	161	1,997	17,800	
5	China Petroleum and Chemical (Sinopec)	18,483	31	18	2%	2			
6	Shanghai Greenland Group	17,274	12	8	2%	202		2	
7	CITIC Group	11,944	28	16	2%	137		6,204	
8	Dalian Wanda Group	10,873	11	6	1%				
9	Hutchison Whampoa	10,501	51	23	1%				98
10	Shanghai Electric	9,078	14	9	1%				
11	Huawei Technologies	8,485	248	68	1%	61	44	8	
12	China Communications Construction	7,434	20	17	1%	93	358	5	371
13	Sany	7,262	26	17	1%		1,563	3	
14	Power Asset Holdings	6,870	1	1	1%				
15	Cosco	6,668	11	11	1%	279		126	3,015
16	Zendai Group	6,400	1	1	1%				
17	China State Construction Engineering	5,493	16	9	1%	21	801	336	
18	China Huaneng	5,306	5	5	1%	286			
19	China Huadian Corporation	5,171	11	10	1%	386		984	
20	China Gezhouba (CGGC)	5,124	10	9	1%				300
Total top-20		257,322	560		34%				

#	Japan	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	Mitsubishi Corporation	52,752	390	58	8%	33		5	92
2	Sumitomo Group	41,644	266	53	6%	231	40	998	
3	Inpex	36,994	16	7	5%				
4	Mitsui & Co	36,553	162	37	5%	157	8	21	
5	Toyota Motor	35,005	358	48	5%	10		56	
6	Marubeni	21,703	72	28	3%	147	27	15	
7	Nissan	19,615	150	42	3%		27	74	58
8	Tokyu	18,161	5	4	3%				
9	Honda	13,034	139	29	2%	34	4		
10	Aeon Co Ltd	11,250	69	11	2%	118		34	
11	Nippon Telegraph & Telephone (NTT)	9,311	187	46	1%	64	2		15
12	Sony	9,171	100	41	1%	116	2		10
13	Idemitsu Kosan	8,336	31	14	1%	354	2	22	
14	Hitachi	7,920	214	40	1%	102	4		

③ fDI Markets continues to show that China's largest greenfield investment is the 2016 Hong Kong Nicaragua Canal Development, even though the project is currently on hold. Time will tell.

15	Electric Power Development (J-Power)	7,641	10	6	1%			
16	Panasonic (Matsushita)	7,352	141	38	1%	131	83	13
17	Nippon Yusen Kabushiki Kaisha (NYK Line)	7,202	131	41	1%		61	61
18	Toshiba	6,275	117	39	1%	371		
19	Bridgestone	6,272	99	37	1%	374	42	
20	Itochu	6,057	61	23	1%	65		125
Total top-20		257,322	560		34%			

#	South Korea	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	Samsung	44,413	297	74	13%	15	8	74	251
2	Pohang Iron & Steel (POSCO)	37,942	133	39	12%	171		100	
3	Hyundai Motor	36,916	228	49	11%	94	117	181	2,148
4	LG	23,267	216	52	7%	185	5		
5	Korea Electric Power (KEPCO)	15,941	35	20	5%	193			
6	Lotte Group	14,705	65	17	4%			29	
7	SK Holdings (SK Group)	12,194	54	20	4%	73	2,179	42	
8	Taekwang Industrial	6,616	10	5	2%			50	
9	Korea Gas Corporation (KOGAS)	5,629	4	3	2%				
10	Hanwha	5,505	55	19	2%	261		142	60
11	SK Hynix (Hynix Semiconductor)	5,020	9	4	2%	335		9	
12	Korea National Oil (KNOC)	4,738	9	9	1%				
13	Dongkuk Steel Mill	4,287	3	3	1%				
14	Korea East-West Power (EWP)	3,800	3	3	1%				
15	Daewoo Engineering	3,423	2	2	1%				
16	Hanjin Group	3,313	26	16	1%				
17	Hankook Tire Worldwide	2,953	22	15	1%			13	
18	SK Innovation (SK Energy)	2,316	2	2	1%				
19	Shinhan Financial	2,129	51	13	1%				
20	Doosan	2,066	37	18	1%		3	35	
Total top-20		237,171	1,261		72%				

#	India	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	Tata Group	19,935	250	63	9%	265	14	12	
2	Indian Oil (IOC)	10,685	13	9	5%	117	6		
3	Jindal Organisation (OP Jindal)	10,160	32	21	5%			292	
4	Essar Group	8,399	35	22	4%			8	
5	Mahindra Group	8,063	109	45	4%			233	74
6	Sobha (Sobha Developers)	6,192	12	8	3%		352		
7	Suzlon Energy	5,114	18	13	2%				
8	Reliance ADA	3,801	17	9	2%				
9	Larsen & Toubro (L&T)	3,193	31	18	2%		5	6	8
10	Videocon Industries	2,803	6	6	1%				

11	National Aluminium Company (Nalco)	2,749	2	2	1%			
12	Bharti Group	2,736	28	20	1%			
13	Indian Farmers Fertiliser Cooperative (IFFCO)	2,651	3	3	1%			
14	Jyoti Structures (JSL)	2,651	2	2	1%			
15	State Bank of India (SBI)	2,639	98	28	1%	236	34	
16	Infosys Technologies	2,632	63	22	1%		10	4 10
17	NTPC Limited (National Thermal Power)	2,465	4	4	1%			
18	Apar Industries	2,245	2	2	1%			
19	Gandhar Oil Refinery (India) Limited	2,245	1	1	1%			2,245
20	Bharat Petroleum (BPCL)	2,006	3	3	1%	275		
Total top-20		103,365	729		49%			

#	Russia	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	Rosatom	46,925	42	30	23%		30,653		9
2	Gazprom	35,450	137	59	18%	42		510	6
3	Lukoil	19,093	71	31	9%	50			
4	Russian Aluminium (RusAl)	7,444	16	12	4%				
5	Russian Technologies State Corporation	6,239	26	14	3%			501	38
6	Rosneft	5,401	23	18	3%	86	200	20	
7	Irkut	5,000	1	1	2%				
8	Kamaz	4,050	31	18	2%		56	74	
9	Russkiye Zheleznye Dorogi (RZD)	3,692	70	38	2%		91	7	57
10	Inter RAO Unified Energy System of Russia	2,800	1	1	1%				
11	Credit Line	2,700	1	1	1%				
12	Itera Group	2,673	11	7	1%				
13	Mobile TeleSystems (MTS)	2,103	32	8	1%				
14	Transgas	2,000	1	1	1%				
15	Vneshtorgbank (VTB Group)	1,974	61	27	1%				
16	NOVATEK	1,946	3	3	1%				1,918
17	Magnitogorsk Iron and Steel Works (MMK)	1,899	7	5	1%			54	
18	Mirax Group	1,874	10	7	1%				
19	Vnesheconombank (Vnesheconombank)	1,866	12	9	1%		30		
20	Sberbank	1,806	33	13	1%	255		16	
Total top-20		156,934	589		78%				

#	Brazil	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	Vale (Companhia Vale do Rio Doce)	13,526	32	19	23%	336			
2	Petrobras	9,932	32	20	17%	74			
3	Odebrecht	5,989	18	14	10%		683		
4	Hejoassu Administracao	4,737	4	4	8%			461	
5	EBX Group	3,274	8	3	5%				
6	Gerdau	1,629	14	7	3%				

7	GMR Empreendimentos e Participacoes	1,501	6	3	3%				
8	Centrais Eletricas Brasileira (Eletrobras)	1,449	10	3	2%				
9	Camargo Correa	1,156	8	6	2%				
10	Marcopolo	1,138	10	7	2%				
11	Sondotecnica	1,000	1	1	2%				
12	Banco Itau Holding Financeira	811	25	15	1%	191		18	
13	Empresa Brasileira de Aeronautica	674	19	9	1%		65		
14	Banco do Brasil	607	21	12	1%	269			
15	Oi	595	7	3	1%				
16	JBS	476	8	6	1%	219			
17	Companhia Siderurgica Nacional (CSN)	380	4	3	1%				
18	Marfrig	369	9	3	1%				
19	Sigma Pharma	359	1	1	1%				
20	Santana	296	3	2	0%				
Total top-20		49,896	240		84%				
#	Mexico	Million US\$	Projects	Countries	Share	Fortune Global #	Last 3 Years investment (Million USD)		
							2017	2018	2019
1	America Movil	10,874	51	15	32%	196	29	57	
2	Grupo Mexico	3,441	4	2	10%				
3	Cemex	2,631	53	17	8%		27		
4	Grupo Empresarial Kaluz	1,881	8	6	6%		17		
5	Telefonos de Mexico (Telmex)	1,811	9	5	5%				
6	Gruma	1,409	12	6	4%				
7	Grupo Salinas	1,210	15	9	4%				2
8	Grupo Posadas	899	9	5	3%		130		
9	Grupo Bimbo	790	19	7	2%		127	36	
10	Arca Continental	743	8	4	2%				
11	Alfa	743	11	6	2%				
12	Fomento Economico Mexicano SA (FEMSA)	519	9	6	2%	488			
13	Industrias CH	500	1	1	1%				
14	Bienes Turgon	293	8	5	1%				43
15	Kio Networks	288	3	3	1%				
16	Kurimanzutto	231	1	1	1%				231
17	FINSA	218	1	1	1%				
18	Grupo Viz	215	2	1	1%				
19	Productos Laminados de Monterrey	204	3	1	1%				
20	Control Administrativo Mexicano	200	1	1	1%				
Total top-20		29,101	228		85%				

Source: Author's information based on data on fDi Markets by Financial Times, accessed annually, the most recent in August 2019.

This section examines the competition and interdependence at the top between the U.S. and China, as exemplified by China being the main target of announced greenfield investments from the U.S., and the U.S. as the

second-most substantial destination for Chinese investments. Both by industry composition and diversification, the two countries look similar. Mexico and Brazil, on the other hand, have only a small number of big firms, and their international presence depends on even fewer companies. In this case, diversification (as shown by the U.S. and China), denotes a healthier, more resilient economy than those countries depending on a few actors.

1.3. Innovation leadership from emerging markets

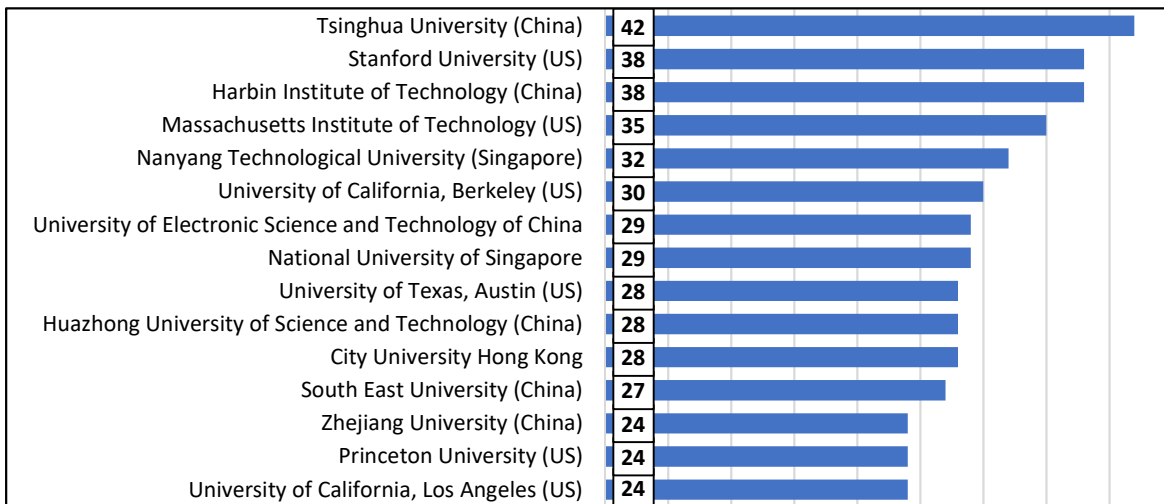
Though we have considered size and traditional indicators in previous reports, we have paid less attention to innovation, arguably the most important future economic indicator (see Casanova and Miroux, 2020). We will first look at broad global performance, then concentrate on Huawei as a company at the forefront of the 5G network innovation. In addition to its innovative activities, Huawei has made headlines as the object of intense scrutiny in the U.S.

The global center of gravity for research and technology is rapidly shifting towards emerging markets. The rise of innovation leadership is especially marked in countries such as China, Korea and India. Tsinghua University in Beijing could well become the top-ranked science university in the world, having produced more of the top 1% most-cited papers in mathematics and computing, as well as a greater share of the 10% most-cited papers in Science, Technology, Engineering and Mathematics (STEM) than any other university in the world (see Figure 1.8).

While many analysts had come to terms with China moving beyond its traditional position as a low-cost producer, few appreciated how far the country had come in the frontiers of science and technology (S&T) research. Figure 1.9 illustrates that China has overtaken the U.S. in three key innovation metrics since 2017: number of scientific researchers, patents and scientific publications.

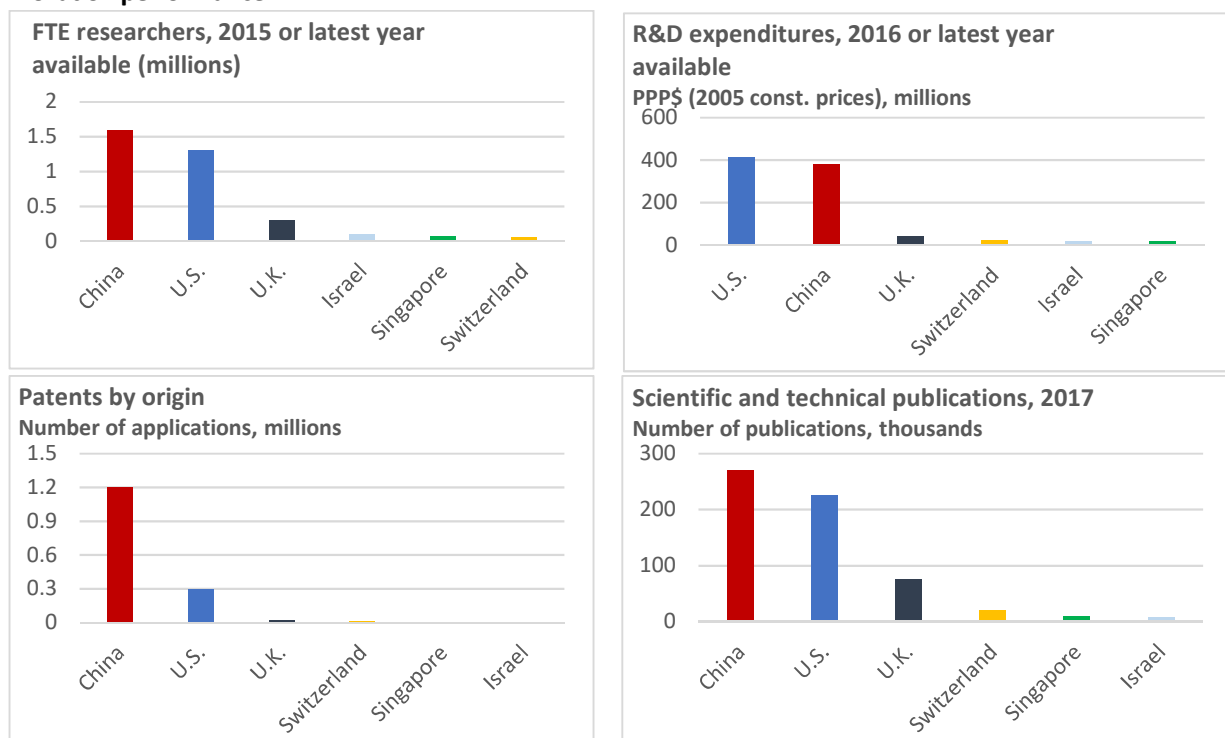
China's rapid progress is also visible in its companies' success. China's global achievements would not have been possible without a disciplined effort to acquire new technology as well as a significant investment in home-grown innovation. Today, leading Chinese firms such as Haier and Huawei (see case study later in this chapter) produce consumer goods that demonstrate the technological progress underway, while the battle for future technological dominance intensifies.

Figure 1.8. Number of papers in the top 1% most highly cited in math and computing by university, papers published 2013-16



Source: Simon Marginson, Oxford University, Centre for Science and Technology Studies, Leiden University.

Figure 1.9. Large high-income economies, upper-middle income China, overshadow small countries in absolute innovation performance



Source: UNESCO Institute for Statistics (UIS) Database, WIPO Statistics Database, Clarivate Analytics, Thomson Reuters, Science Citation Index (SCI), Social Science Citation Index (SSCI).

Note: FTE = Full-time equivalent.

We draw on the Global Innovation Index (GII, www.globalinnovationindex.org) published by the Geneva-based World Intellectual Property Organization in cooperation with Cornell University and INSEAD to demonstrate the rise of emerging markets in innovation. The GII is widely recognized as the most comprehensive measure of a country's innovation capability. The ranking provides detailed metrics for more than 120 countries each year, representing more than 90% of the world's population and more than 96% of the world's GDP (in current U.S. dollars). The overall GII score is the simple average of the Input and Output Sub-Index scores.

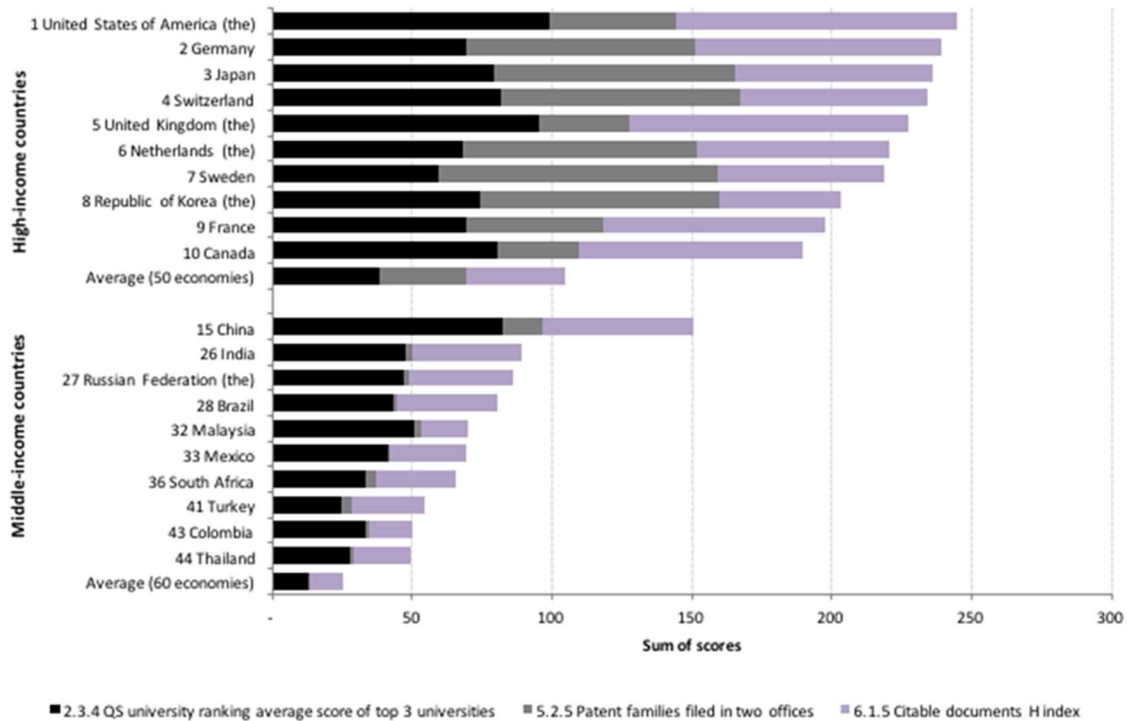
The Innovation Input Sub-Index comprises five input pillars that capture elements of the national economy that enable innovative activities: (1) Institutions, (2) Human Capital and Research, (3) Infrastructure, (4) Market Sophistication, and (5) Business Sophistication. The Innovation Output Sub-Index provides information about outputs that are the results of innovative activities within the economy. There are two output pillars: (6) Knowledge and Technology Outputs and (7) Creative Outputs.

From a rank of 34th in 2012, China has risen to the 14th overall position in 2019. China now ranks 5th in the world in the Innovation Output Sub-Index in 2019, up five positions from 2018. In Knowledge and Technology outputs, it is also 5th in the world, while in Creative Outputs it ranks 12th. It performs at an impressive level on many of the input dimensions as well, ranking 14th on Business Sophistication and 21st on Market Sophistication.

The GII also measures the quality of innovation through a subset of key variables: (1) quality of local universities (QS World University Ranking, average score of top three universities); (2) internationalization of local inventions (patent families filed in three offices); and (3) the number of citations that local research documents receive abroad (citable documents H index).

Figure 1.10 shows how the scores of these three indicators identify the top 10 highest performing high- and middle-income economies. China leads among middle-income economies in the quality of innovation aggregate measure, and is shrinking the gap with the U.S. year upon year.

Figure 1.10. Metrics for quality of innovation—Top 10 high- and middle-income economies, 2019



Source: Global Innovation Index Database, Cornell, INSEAD, and WIPO, 2019.

Notes: Numbers to the left of the economy name are the innovation quality rank. Economies are classified by income according to the World Bank Income Group Classification (July 2018). Upper- and lower middle-income categories are grouped together as middle-income economies.

Korea is 11th in the world on the 2019 GII rankings, three positions higher than China. Korea enters the top 10 in the Innovation Input Sub-Index in 2019, keeping up its good performance and gaining four positions since 2018. On the input side, Korea improves the most in Business Sophistication (10th, up by 10) and gains positions in Human Capital and Research—where it becomes the top economy in the world—and in Market Sophistication (11th, up 3 places). Korea maintains its good ranks in a number of crucial variables, including most of the R&D-related indicators, as well as Tertiary Enrollment, Researchers, Research Talent in Business Enterprises, E-participation, ICT Use, and Patent Families in Two or More Offices. Korea is ranked 8th on the overall quality of innovation (**Figure 1.10**) on the basis of its impressive performance on all three key innovation quality metrics.

India ranked 52nd overall in the GII in 2019, gaining five positions since 2018. It remains 1st in its region and moved up to the 4th position among lower-middle-income economies. India has also outperformed on innovation relative to its GDP per capita for nine consecutive years. The country confirms its rank among the top 50 economies in two pillars, Market Sophistication (33rd) and Knowledge and Technology Outputs (32nd), with its highest rank of the year in the latter pillar. India scores very highly in some key innovation metrics such as Graduates in Science and Engineering (7th) and ICT Services Exports (as % of total trade) (1st). India ranks 2nd in Quality of Innovation (see **Figure**

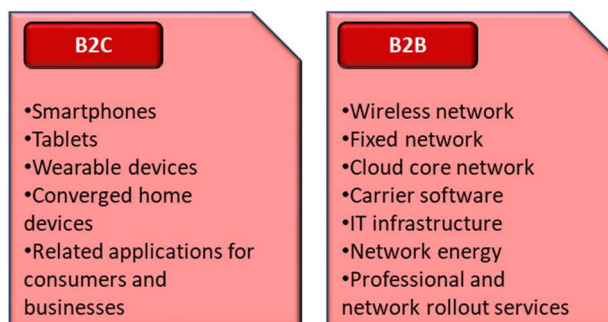
1.10 among middle-income economies for the fourth consecutive year, with particular strength in Quality of Scientific Publications (2nd) and in the Quality of Universities (3rd), notably due to the performance of its top three universities: the Indian Institute of Technology (Delhi and Bombay) and the Indian Institute of Science Bangalore. Brazil retains its 4th place among middle-income countries, and 28th globally.

The GII presents a detailed analysis of the innovation performance of more than 120 nations around the world, most of them emerging markets. From the selected results described above, it is evident that emerging markets are increasingly leading on innovation. While China's and Korea's innovation leadership have been exemplary in recent years, similar trends are visible in many of the other E20 nations. We now present a short case study on one of the most innovative companies from China, Huawei.

1.4. Case Study: Huawei, a 5G champion[®]

In this last section, we take a deeper look at one of the companies at the heart of the U.S.-China trade dispute, Huawei. Headquartered in Shenzhen, China, Huawei Investment & Holding Co., Ltd. was founded in 1987 by Ren Zhengfei. It provides solutions in information and communication technology (ICT) for telecom carriers, companies and consumers. With sales of \$105.2 billion and gross profits of \$40.4 billion in 2018. Huawei is the No. 2 Global Communications Equipment company by sales, ranking highly in each of its component industries of data networking equipment, mobile phones and telecommunication equipment, (4th, 1st, and 3rd respectively). The company now ranks fifth globally in the 2018 EU Industrial R&D Investment Scoreboard by total investments in R&D after Samsung, Alphabet, Volkswagen and Microsoft, but ahead of Intel and Apple. Huawei entered the Fortune Global 500 in 2009 in the 397th position and in 2019 was number 61. Huawei's strategy relies heavily on internationalization of R&D (Casanova and Miroux, OECD Business Insights, 2017). The company opened its first international R&D center in 1999 in Bengaluru, India, and has grown to 21 centers established in the U.S., Canada, Japan, and Western Europe. Huawei is now a major supplier for most of the 35 biggest telecom operators.

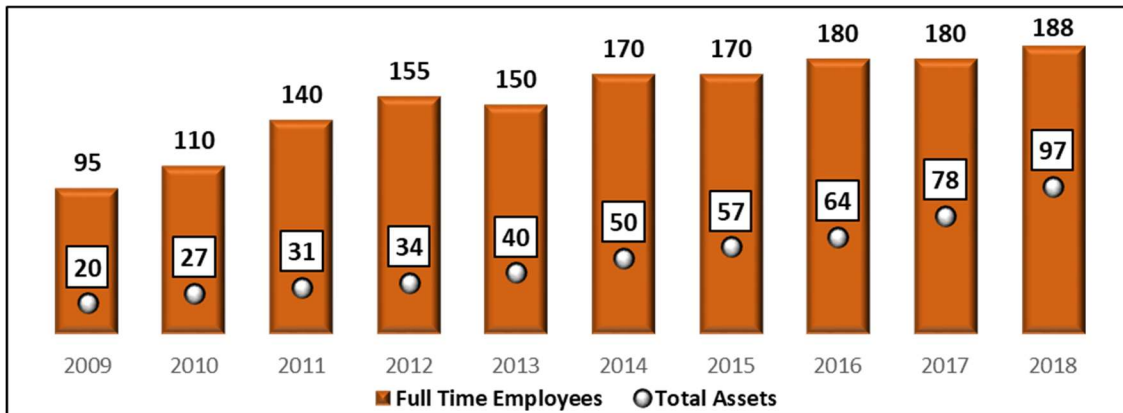
Figure 1.11. Huawei's products and services



Source: Authors based on S&P Capital IQ (<https://www.capitaliq.com/>), accessed August 2019.

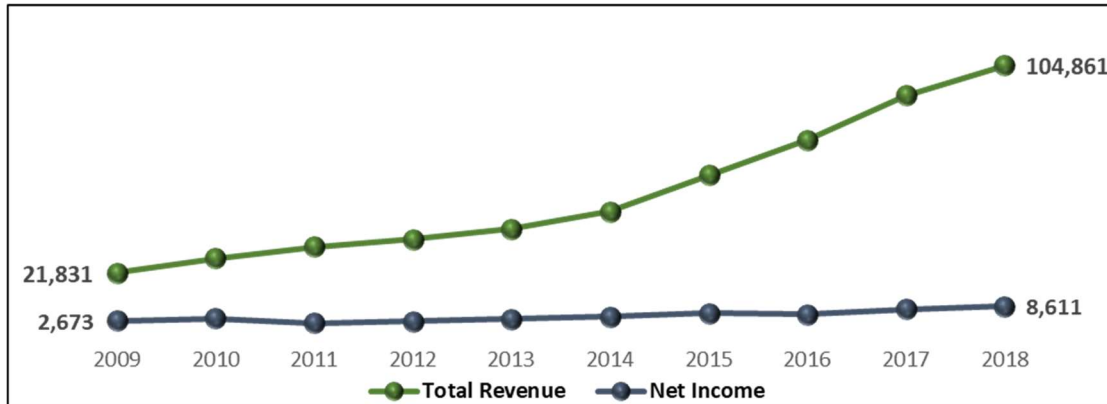
[®] The contributions of Mariana Rodríguez Díaz, Julián Díaz Costa, interns at EMI during the summer of 2019 and students at Universidad de los Andes in Colombia is gratefully acknowledged.

Figure 1.12. Huawei's annual number of full-time employees (thousands) and total assets value (USD billions) from 2009 to 2018



Source: Authors based on S&P Capital IQ (<https://www.capitaliq.com/>), accessed September 2019.

Figure 1.13. Huawei's annual total revenue and net income from 2009 to 2018 (USD billions)



Source: Authors based on S&P Capital IQ (<https://www.capitaliq.com/>), accessed September 2019.

Huawei has a presence in more than 170 countries and regions. According to the company's 2018 annual report, 24.3% of its revenues come from Europe, Middle East and Africa. Some reports state that Huawei has built 70 of African's 4G networks and is about to build a 5G one in South Africa.

Unusually, the firm is owned by its 188,000 employees.^⑤ The 115 representatives who form the Representatives' Commission are elected by shareholding employees, who in turn are responsible for choosing the Chairman of the Board and the remaining 16 board directors. This Board of Directors elects three executive directors and four deputy chairmen, three of whom take turns serving as the company's rotating chairman. Forty percent of the employees are in R&D activities.

Company history and internationalization

^⑤ Employees own a kind of virtual Huawei stock, which they cannot transfer to others. If the employee leaves the company when s/he has not reached the necessary seniority level to keep the shares, Huawei buys them back (Zhong, R. 2019)

Huawei began as a seller of private branch exchanges (PBX) and evolved into a global giant in telecommunications equipment and smartphones. The firm's history can be divided into three stages (Muralidhara and Faheem, 2019 & Li Sun, 2009). The first stage, from 1987 to 1992, marks its consolidation in, and dominance of, the Chinese market for low-cost PBX products and motherboards. Unlike other potential rival companies, which focused their business in urban markets, Huawei started in the periphery of China focused on rural areas where it faced little competition. Once it had secured its business in the Chinese countryside and learnt by doing, the company expanded into cities and, only then, the entire country. Unlike other Chinese telecom firms, which typically acted as agents of Western companies, Huawei invested heavily in its own R&D from the beginning, distributing its products into the growing Chinese market. These novel strategies combined with intelligent marketing campaigns gave Huawei a dominant position at home within a short period of time, overtaking leading competitors such as French Alcatel and Chinese Shanghai Bell.

During the second stage, from 1993 to 2000, Huawei experienced significant economic growth alongside the growth of the Chinese economy. China was liberalizing its economic policy, and the Chinese government's demand for electronic products was increasing. This environment, combined with significant R&D investments, enabled Huawei to solidify its dominance beyond its earliest market segment of selling telecom products in Chinese rural areas at low cost. For instance, in 1997, Huawei took advantage of China's booming mobile cellular network and launched wireless Global System for Mobile Communications (GSM)-based solutions, which significantly drove down the sales price of GSM equipment in China.

During this period, Huawei began to expand internationally. In 1997, it signed its first contract with the Hong Kong-based firm Hutchison Telecommunications. Huawei won the contract by offering Hutchison faster and cheaper implementation of number portability than established suppliers could offer.

That same year, Huawei formed a joint venture with Beto Corporation, a Russian manufacturer of telecommunication equipment, to assemble Huawei's switches in Russia. This partnership enabled Huawei to benefit from Beto's assets, such as its sales force in the Russian market and its relationships with government officials. When expanding to international markets, Huawei followed a similar approach to its domestic strategy, targeting markets with high demand for low-cost products and limited competition. After entering Hong Kong and neighboring Russia, the company expanded into emerging economies such as Algeria, India, Vietnam, as well as setting up an R&D center in Bengaluru, India in 1999. Notwithstanding these forays abroad, Huawei's expansion still relied on strong growth in China. For instance, in 1999 the company launched its first digital product, access servers. In only one year, the company supplied 70% of all newly installed access servers in China.

Later, the expansion moved to more competitive markets such as Europe and Australia. By 2001, the third stage of the company's globalization process had begun, as China gained access to the World Trade Organization (WTO) and Huawei entered the U.S. Following its "continuous customer-centric innovation and win-win cooperation"

strategy, Huawei expanded its research centers to the U.S., Canada, Japan, and Western Europe, establishing 21 R&D centers and 36 joint innovation centers worldwide.

By 2004, Huawei's low prices and high-end innovations had proved attractive in Europe. The Dutch firm Telfort wanted to deploy a 3G network but lacked the space to house the necessary equipment at its base stations. Huawei created a new base station that could be extended in two parts, needed little space to install, and was cheaper to run than existing alternatives. In just a few months, the companies sealed a 10-year contract worth 230 million euros. This was Huawei's entry point into Europe, followed by additional contracts in Germany and France.

The company also entered the U.S. in 2001, pricing its products in the U.S. market 30% lower than Cisco's. As major U.S. firms recognized the threat that Huawei posed to their business, they fought back, limiting Huawei's expansion in the market (see **Box 1.1**).

Despite the complications in entering the U.S., Huawei made inroads in the 3G market. In 2002, the company reached cross-licensing agreements with Ericsson and Nokia, the main patent holders of Wide-Band Code Division Multiple Access (WCDMA). However, it was not until 2004 that Huawei entered the cell phone business with its first 3G mobile phone.

Box 1.1. 2001, Huawei in the U.S: Cisco's new competitor

Huawei entered the U.S. market as a low-cost competitor. Its closest rival, Cisco, saw Huawei's bold advertising campaign as a significant threat and proposed Huawei leave the U.S. market and drop its R&D in high-end products, in exchange for Cisco yielding its orders for low-end equipment to Huawei. Huawei rejected this request, setting off a commercial war between the two companies.

In January 2003, Cisco sued Huawei, claiming infringement of its intellectual property rights. The former claimed, among other infringements, that the latter copied both code from its operating system and text from its technical documentation in the Quidway routers and switches. With the lawsuit, the company sought to stop Huawei from selling its Quidway lineup in the U.S.. Huawei subsequently formed a joint venture with 3Com, a U.S.-based competitor to Cisco, to develop and manufacture networking equipment. This partnership also improved its bargaining power in an eventual settlement of the lawsuit. Finally, in July 2004, the companies reached an agreement, according to which Huawei would withdraw its Quidway products from the U.S. market and revise its code, user interfaces and documentation to address Cisco's concerns. This conflict delayed Huawei's expansion in the U.S.

Later in 2011, Huawei initiated an integrated "cloud-pipe-device" strategy, which aimed to create synergies across its three businesses: cloud computing, information networks and smart devices. Additionally, Huawei adopted a dual brand (Honor and Huawei) and dual channel approach with online and offline sales to start competing in the market for medium- and high-end smartphones. In 2013, Honor initiated independent operations in 74 countries and regions, and sold more than 40 million units per year by 2015. Huawei-brand smartphones, which target the same market as Apple and Samsung, shipped seven million units globally by 2016, making the company first in global

telecoms equipment and third in smartphones (See **Figure 1.14** for Huawei's performance by industry), with a market share of 14.68% for the smartphones industry (See **Figure 1.15**). Huawei then began to invest in manufacturing in India, projecting that the country would become its second-largest market.

Figure 1.14. Huawei compared to its main competitors in the different industries they operate (2018)

Communications Equipment					Data Networking Equipment				
Rank	Company	HQ	Revenue (billion US\$)	Mkt Cap (billion US\$)	Rank	Company	HQ	Revenue (billion US\$)	Mkt Cap (billion US\$)
1	APPLE INC	United States	164.9	927.3	1	FOXCONN INDUST-A	China	39.1	38.3
2	SHENZHEN HUAWEI	China	108.9	-	2	CISCO SYSTEMS	United States	36.7	234.3
3	SAMSUNG ELECTRON	South Korea	91.5	238.5	3	NOKIA OYJ	Finland	22.3	28.3
4	FOXCONN INDUST-A	China	39.1	38.3	4	SHENZHEN HUAWEI	China	11.2	-
5	CISCO SYSTEMS	United States	36.7	234.3	5	ERICSSON LM-B	Sweden	11.1	31.7
6	NOKIA OYJ	Finland	22.3	28.0	6	ZTE CORP-A	China	8.6	19.3
7	XIAOMI CORP-B	China	17.2	30.8	7	JUNIPER NETWORKS	United States	4.6	9.3
8	ZTE CORP-A	China	11.5	19.1	8	F5 NETWORKS	United States	2.2	8.8
9	ERICSSON LM-B	Sweden	11.1	31.5	9	ARISTA NETWORKS	United States	1.8	20.1
10	POTEVIO CO LTD	China	11.0	-	10	ACCTON TECH	China	1.4	2.4

Mobile Phones					Telecommunications Equipment				
Rank	Company	HQ	Revenue (billion US\$)	Mkt Cap (billion US\$)	Rank	Company	HQ	Revenue (billion US\$)	Mkt Cap (billion US\$)
1	APPLE INC	United States	164.9	927.3	1	SHENZHEN HUAWEI	China	44.4	-
2	SAMSUNG ELECTRON	South Korea	91.5	235.7	2	POTEVIO CO LTD	China	11.0	-
3	SHENZHEN HUAWEI	China	52.7	-	3	MOTOROLA SOLUTIO	United States	5.1	27.5
4	XIAOMI CORP-B	China	17.2	30.8	4	COMMSCOPE HOLDIN	United States	4.6	3.1
5	SHENZHEN AISI-A	China	7.7	1.1	5	ZHONGTIAN TECH-A	China	4.5	4.2
6	LG ELECTRONICS	South Korea	7.2	10.8	6	ANIXTER INC	United States	4.3	-
7	TCL CORP-A	China	4.4	6.8	7	CORNING INC	United States	4.2	26.8
8	SONY CORP	Japan	4.4	68.3	8	FUTONG GROUP	China	3.7	-
9	TCL COMM TECH HL	China	3.7	-	9	FUJIKURA LTD	Japan	3.2	1.2
10	CHENG UEI	China	2.9	0.5	10	TECHNICOLOR-REGR	France	2.6	0.4

Source: Authors based on data from Bloomberg, 2019 accessed August 2019.

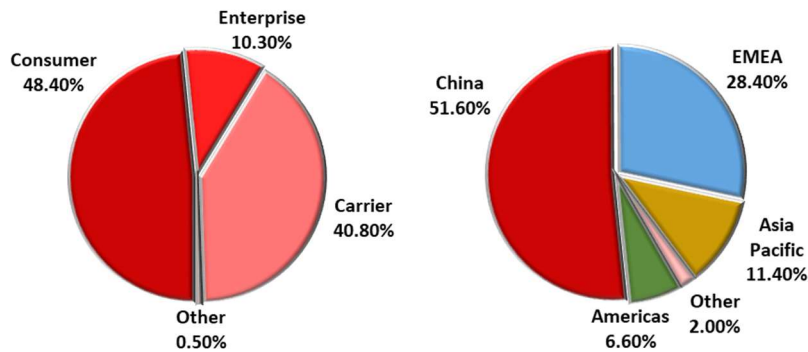
With Huawei's diversified product portfolio, which began as manufacturing phone switches and now comprises end-to-end solutions in telecom and enterprise networks, devices, and cloud computing, the company vaulted to the top of the industry. The company's consumer business accounted for 48% of its total revenues (See **Figure 1.16** for Huawei's revenues by business); 51.6% of revenues came from China and 28.4% from EMEA, while other Asia Pacific and the Americas accounted for 1.4% and 6.6%, respectively (see **Figure 1.16**). Meanwhile, Huawei shipped a total of 206 million smartphones in 2018, an increase of 25% compared to the previous year.

Figure 1.15. Market share by units sold of smartphones 2016 to 2018

Company	HQ	2016			2017			2018		
		Rank	Shipment (M)	Share	Rank	Shipment (M)	Share	Rank	Shipment (M)	Share
Samsung	South Korea	1	364.2	18.5%	1	369.3	18.7%	1	324.2	17.2%
Apple	United States	2	215.4	10.9%	2	215.8	10.9%	2	208.8	11.1%
Huawei	China	3	139.6	7.1%	3	154.3	7.8%	3	206.0	10.9%
Transsion	China	5	80.1	4.1%	4	129.3	6.5%	4	133.1	7.1%
Xiaomi	China	7	53.0	2.7%	6	92.7	4.7%	5	119.1	6.3%
OPPO	China	4	99.8	5.1%	5	111.7	5.6%	6	113.3	6.0%
vivo	China	6	77.3	3.9%	7	87.6	4.4%	7	101.1	5.4%
HMD	Finland	9	50.7	2.6%	8	69.3	3.5%	8	85.3	4.5%
Reliance	India	10	7.7	0.4%	10	14.8	0.7%	9	65.5	3.5%
Lenovo	China	8	51.2	2.6%	9	50.5	2.6%	10	40.9	2.2%
Others	-	-	831.9	42.2%	-	682.4	34.5%	-	490.4	26.0%
Total			1,970.9			1,977.6			1,887.7	

Source: Authors based on data from Bloomberg, 2019b accessed September 2019.

Figure 1.16. Huawei's revenues by business lines and by regions, 2018



Source: Authors based on Huawei Annual Report 2018.

Betting the company on research and innovation

Huawei's success owes much to its investment in R&D, amounting to more than 10% of its sales revenue every year. In 2018 alone, total expenditure in R&D was equivalent to 14.1% of the sales revenue. The company's \$20 billion R&D budget is larger than the sum of its three closest rivals (Soo, Z & Tao, L. 2019). Huawei is now one of the world's largest patent holders, with 87,805 granted patents as of December 2018 (Huawei, 2018). Of the 1,450 5G patents filed as of January 2019, Huawei and ZTE own around 10%, while Qualcomm owns 15%, Nokia 11%, and Ericsson 8% (Wu, 2019).

As CEO Zhijun Xu, puts it, "Huawei's development has two driving forces: one is market pull — to provide solutions to meet customers' needs, and the other is technology push — to use new technologies to provide better services at lower costs" (Xu, Jaisingh, Kim, & Huang, 2016). With these two forces driving Huawei's development, the company has invested more than \$4 billion over the last decade for the development of the next generation wireless technology (5G) (Pham, S. 2019). Huawei is the first company to develop large-scale 5G commercial distribution capabilities, and as of June 2019, it won more than 50 5G commercial contracts and shipped over 150,000 5G sites around the world (Kawakami, 2019).

Huawei's R&D and joint innovation centers have had positive outcomes for the company and its partners. On the one hand, Huawei has been able to better leverage partners' technology and understanding of end-users needs, while strengthening its relationships (OECD, 2017). On the other hand, it has helped its partners implement their own global strategies "in a matter that not only reduces costs but enhances the bottom line" (Huawei, n.d. c) with a shortened time-to-market.

When Huawei entered the digital market, its experience in joint innovation allowed it to collaborate with strongly positioned partners, such as SAP and Accenture, which led to cloud and enterprise applications initiatives. Other well-known Huawei partners include Infosys, GE, Microsoft and Hexagon.

Huawei facing policy backlash

Over time, Huawei's U.S. market challenges have worsened. Huawei's entry in 2001 led to its first U.S. challenge, a 2003 conflict with Cisco (see Box 1.1). In 2008, 3Com raised concerns about Huawei's ties with the Chinese government, ending a deal between the companies. In 2014 T-Mobile sued Huawei for IP violations of the design for a part of a robot's arm and other technologies. Even as its business with small wireless carriers in the U.S. grew, top carriers proved more difficult to attract. AT&T walked away from a contract with Huawei in January 2018, and around the same time Verizon announced it would not sell Huawei phones due to pressure from the U.S. government (Lahiri, & Hui, 2019) (See **Figure 1.17** for a Huawei-U.S. relationship timeline).

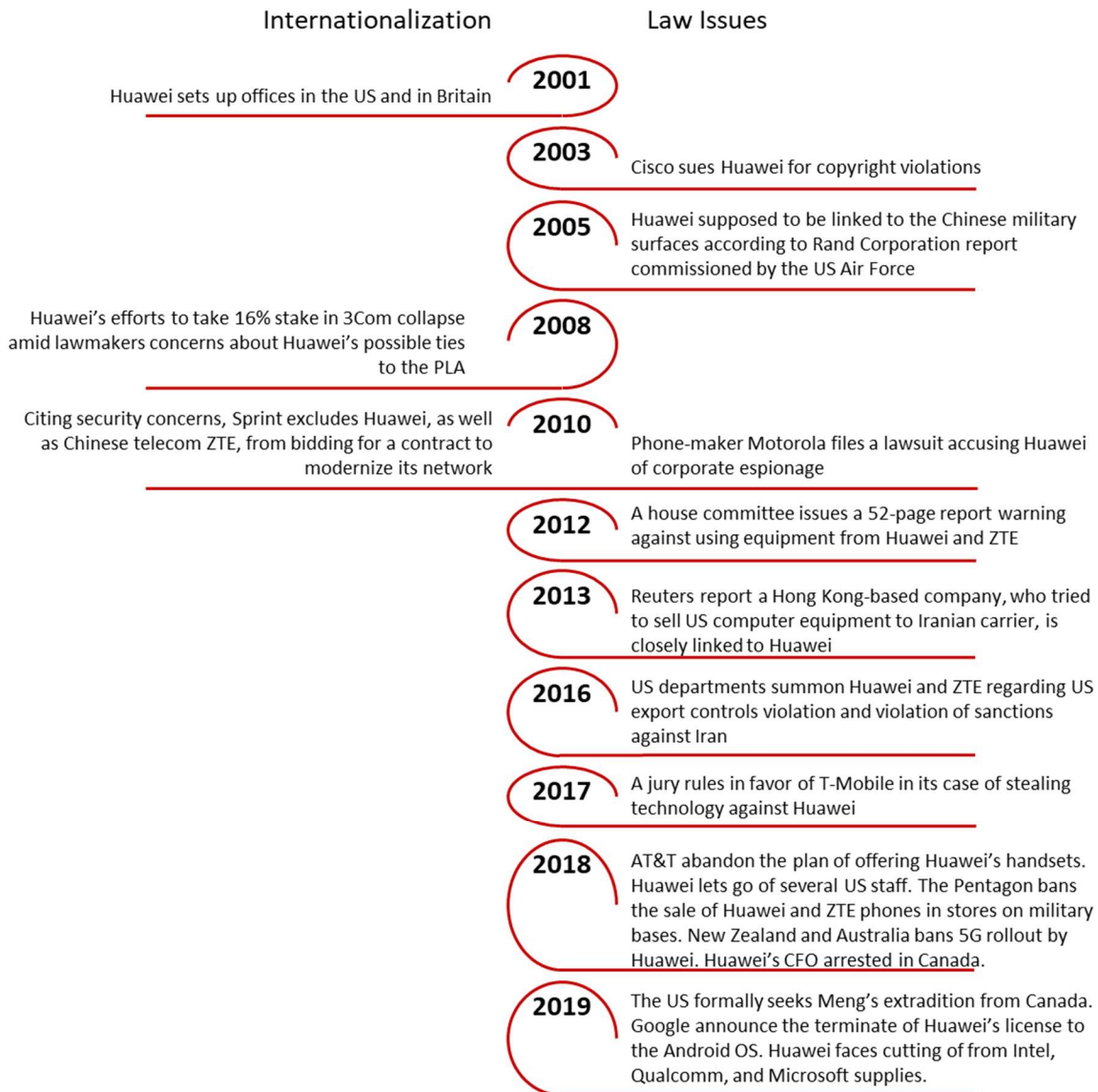
Government authorities, such as the Committee on Foreign Investment, the Department of Commerce as well as the U.S. Congress, increased their scrutiny on Huawei's bid for important contracts and to acquire strategic assets, such as network infrastructure or software supplier companies. The press reported that U.S. regulators claimed Huawei posed a national security risk, arguing the company's operations in the U.S. could be used for espionage by the Chinese government. In response to these concerns, in 2011 Huawei initiated a public relations strategy to change its public perception among consumers and U.S. public officials.

Recently, President Trump's administration introduced much more severe actions against Huawei. On May 2019, the administration blocked purchases of Huawei's products in the U.S., banning it from accessing U.S. supply chains. President Trump declared it a national emergency, signing an executive order that forbids U.S. companies from using telecom services from abroad that could threaten national security. Shortly after this order, Google pulled Huawei's Android license and Huawei was added to the Department of Commerce's "Entity List", as a result of which American firms would only be authorized to sell to Huawei after receiving the government's expedited license.

Huawei's troubles have global implications. The U.S. began pressuring other countries to block installation of Huawei's 5G networks even before the executive order was signed. In 2018, both Australia and New Zealand banned the company from supplying the necessary technology for 5G infrastructure installation. The European market remains uncertain, with governments under pressure to stand with the U.S., but Huawei still has supporters. Against this backdrop, Vodafone suspended Huawei's equipment distribution across Europe because of the political backlash (Soo & Tao, 2019).

Huawei insists that the U.S. ban will not affect its 5G business, and that they will keep building the simplest transaction models while developing the most secure systems "ensuring the highest levels of network resilience and compliance with the General Data Protection Regulation (GDPR)" (Huawei, 2018). According to Eric Chiu, an analyst at WitsView, Huawei has the most resources and knowledge related to 5G of any company. It is thus well poised to expand in the new market (Ting-Fang, & Li, 2019).

Figure 1.17. Huawei and the U.S. milestones and confrontations



Source: Authors based on Lahiri, T & Hui, M., 2019.

What next? Is this only Huawei or is this a technology war?

The 5G war is just beginning. Both China and the U.S. hold a sufficiently large number of patents and expertise that the outcome is far from certain. We could end up with "two distinct technology systems, with other countries forced to choose if they are going to plug into American or Chinese technology platforms and standards" (Segal, A. 2018). Since both technological powers aim to dominate the new era, the result could be rival monopolistic powers. Meanwhile, the U.S. government is more focused on banning Huawei than investing in its own technologies. Huawei's CEO, Ren Zhengfei, suggests that the company was prepared for a U.S. conflict and that they already have

the ability to make chips with the same quality as those of the U.S., but that Huawei bought from American companies such as Google to keep from being isolated from the world.

Though significant challenges loom over Huawei in 2019, the crisis will not keep the giant from growing. The company is the target of much scrutiny by Western governments but may stay the course and, as a result, strengthen its homemade ecosystem while continuing to innovate in technology and promote social progress.

Will Chinese and emerging multinationals continue to grow?

Huawei epitomizes the outburst of eMNCs more broadly across the global stage. Chinese firms have led the charge, increasingly reaching the top ranks (by size) in many sectors and parity with U.S. companies. While it is too early to say how this rivalry will unfold, from trade wars to increased scrutiny of federal investments, we confirm the resilience of Chinese companies, as they continue to grow domestically and internationally, with increased representation in the Fortune Global 500.

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Appendix 1.1. 50 biggest emerging multinationals 2019 Fortune Global 500

Rank	Company	Industry	Revenues (Millions USD)	Profit Margin Change (%)	HQ*	Market cap Q1 2019 (Millions USD)	Short Business Description	Years on FG500 List
2	Sinopec Group	Petroleum Refining	\$ 414,649.90	2.80	China	N.A.	China Petroleum & Chemical Corporation, an energy and chemical company, engages in oil and gas, and chemical operations in the People's Republic of China. It operates through five segments: Exploration and Production, Refining, Marketing and Distribution, Chemicals, and Corporate and Others.	21
4	China National Petroleum	Petroleum Refining	\$ 392,976.60	0.00	China	N.A.	China National Petroleum Corporation produces and supplies oil and gas. It engages in the hydrocarbon exploration and production operations in onshore and offshore areas in China, Africa, Central Asia-Russia, South America, the Middle East, and the Asia-Pacific.	19
5	State Grid	Utilities	\$ 387,056.00	-0.14	China	N.A.	State Grid China Co., Ltd. constructs and operates power grids in China. The company provides power to approximately 1.1 billion people in 26 provinces, autonomous regions, and municipalities. It also owns and operates assets in the Philippines, Brazil, Portugal, Australia, Italy, Hong Kong, and Greece. The company was founded in 2002 and is based in Beijing, China.	19
6	Saudi Aramco	Mining, Crude-Oil Production	\$ 355,905.00	0.47	Saudi Arabia	N.A.	Saudi Arabian Oil Company operates as an integrated oil and gas company in the Kingdom of Saudi Arabia. It operates in Upstream and Downstream segments.	1
15	Samsung Electronics	Electronics, Electrical Equip.	\$ 221,579.40	0.09	South Korea	\$234,266.52	Samsung Electronics Co., Ltd. engages in the consumer electronics, information technology and mobile communications, and device solutions businesses worldwide.	25
21	China State Construction Engineering	Engineering, Construction	\$ 181,524.50	0.18	China	\$38,277.94	China State Construction Engineering Corporation Limited operates as an integrated construction and real estate company	8

							in China. It provides general contracting services for building, municipal public, and highway works.	
26	Industrial & Commercial Bank of China	Banks: Commercial and Savings	\$ 168,979.00	0.06	China	\$287,312.31	Industrial and Commercial Bank of China Limited provides various banking products and services primarily in China and internationally. It operates through Corporate Banking, Personal Banking, and Treasury Operations segments.	21
29	Ping An Insurance	Insurance: Life, Health (stock)	\$ 163,597.40	0.23	China	\$207,826.71	Ping An Insurance (Group) Company of China, Ltd. provides financial products and services for insurance, banking, asset management, and fintech and healthtech businesses in China.	10
31	China Construction Bank	Banks: Commercial and Savings	\$ 151,110.80	0.07	China	\$207,826.71	China Construction Bank Corporation provides various banking and related financial services in the People's Republic of China. It operates through Corporate Banking, Personal Banking, Treasury Business, and Others segments.	20
36	Agricultural Bank of China	Banks: Commercial and Savings	\$ 139,523.60	0.07	China	\$191,583.39	Agricultural Bank of China Limited provides corporate and retail banking products and services in the Mainland China and internationally. The company operates through Corporate Banking, Personal Banking, and Treasury Operations segments.	20
39	SAIC Motor	Motor Vehicles and Parts	\$ 136,392.50	0.07	China	\$45,378.92	SAIC Motor Corporation Limited researches and develops, produces, and sells passenger cars and commercial vehicles in the People's Republic of China and internationally.	8
42	Gazprom	Energy	\$ 131,302.00	0.89	Russia	\$50,379.25	Public Joint Stock Company Gazprom, an energy company, engages in the geological exploration, production, processing, storage, transportation, and sale of gas, gas condensates, and oil in Russia and internationally.	23
44	Bank of China	Banks: Commercial and Savings	\$ 127,714.10	0.07	China	\$156,304.59	Bank of China Limited, together with its subsidiaries, provides a range of banking and related financial services in the People's Republic of China and internationally.	25

50	Lukoil	Petroleum Refining	\$ 119,145.00	0.37	Russia	\$61,305.49	PJSC LUKOIL, together with its subsidiaries, engages in exploration, production, refining, marketing, and distribution of oil and gas. The company's Exploration and Production segment explores for, develops, and produces primarily crude oil.	20
51	China Life Insurance	Insurance: Life, Health (stock)	\$ 116,171.50	-10.63	China	\$107,860.96	China Life Insurance (Group) Company Limited, through its subsidiaries, provides insurance services in China. It offers life, health, accident, and other types of personal insurance products and reinsurance services. The company also offers asset management, pension, industrial investment, and education and training services	17
55	China Railway Engineering Group	Engineering, Construction	\$ 112,132.70	0.06	China	N.A.	China Railway Engineering Corporation (CREC) operates as a holding company. The Company, through its subsidiaries, provides services including surveying, construction, design solutions, installation, manufacturing, R&D, technical consulting, capital management, international trade, property management, and railway development. CREC offers their services worldwide.	5
56	China Mobile Communications	Telecommunications	\$ 112,096.00	0.07	China	N.A.	China Mobile Communication Company Limited offers mobile telecommunication and related services.	19
59	China Railway Construction	Engineering, Construction	\$ 110,455.90	-0.09	China	\$22,444.98	China Railway Construction Corporation Limited, together with its subsidiaries, operates as an integrated construction company in Mainland China and internationally. It operates through five segments: Construction Operations; Survey, Design and Consultancy Operations; Manufacturing Operations; Real Estate Development Operations; and Other Business Operations.	8
61	Huawei Investment & Holding	Network and Other Communications Equipment	\$ 109,030.40	0.28	China	N.A.	Huawei Investment & Holding Co., Ltd. provides information and communication technology (ICT) solutions for telecom carriers, enterprises, and consumers worldwide.	10

63	China National Offshore Oil	Mining, Crude-Oil Production	\$ 108,130.40	1.43	China	N.A.	China National Offshore Oil Corporation engages in the exploration, development, and production of oil and gas in China and internationally. It also offers engineering and technical services, including oilfield, offshore oil engineering, and engineering technology services.	13
67	China Development Bank	Banks: Commercial and Savings	\$ 103,072.90	0.01	China	N.A.	China Development Bank provides various banking and financial products and services in China and internationally. The company operates through Banking, Equity Investment, Leasing, and Securities segments. T	3
73	SK Holdings	Petroleum Refining	\$ 95,904.50	0.38	South Korea	\$13,271.54	SK Holdings Co., Ltd. operates in energy, chemicals, IT, and semiconductor industries in South Korea and internationally. The company was founded in 1991 and is based in Seoul, South Korea.	4
74	Petrobras	Petroleum Refining	\$ 95,584.00	0.00	Brazil	\$6,914.08	Petróleo Brasileiro S.A. - Petrobras operates in the oil, natural gas, and energy industries in Brazil and internationally. It engages in prospecting, drilling, refining, processing, trading, and transporting crude oil from producing onshore and offshore oil fields and shale or other rocks, as well as oil products, natural gas, and other liquid hydrocarbons.	25
80	China Resources	Pharmaceuticals	\$ 91,986.00	0.10	China	N.A.	China Resources (Holdings) Co., Ltd., through its subsidiaries, engages in power, property, cement, gas, pharmaceuticals, and finance businesses.	10
82	Dongfeng Motor	Motor Vehicles and Parts	\$ 90,934.20	0.14	China	N.A.	Dongfeng Motor Group Company Limited manufactures and sells commercial vehicles, passenger vehicles, and auto engines and parts in the People's Republic of China. The company operates through four segments: Commercial Vehicles, Passenger Vehicles, Financing Service, and Corporate and Others.	10

86	Rosneft Oil	Petroleum Refining	\$ 90,055.00	1.30	Russia	\$66,449.19	Public Joint Stock Company Rosneft Oil Company, together with its subsidiaries, engages in the exploration, development, production, and sale of crude oil and gas.	14
87	China FAW Group	Motor Vehicles and Parts	\$ 89,804.70	-0.07	China		China FAW Group Corporation manufactures and sells vehicles.	15
88	Sinochem Group	Trading	\$ 89,358.10	-0.07	China	N.A.	Sinochem Group Co., Ltd. engages in the energy, agriculture, chemicals, real estate, and finance service businesses in China and internationally.	24
93	China Communications Construction	Engineering, Construction	\$ 88,140.90	0.03	China	\$26,474.32	China Communications Construction Company Limited, together with its subsidiaries, engages in the infrastructure construction, infrastructure design, dredging, and other businesses.	12
94	Hyundai Motor	Motor Vehicles and Parts	\$ 87,999.20	-0.62	South Korea	\$21,290.36	Hyundai Motor Company, together with its subsidiaries, manufactures and distributes motor vehicles and parts worldwide. It operates through Vehicle, Finance, and Others segments.	24
95	Pemex	Mining, Crude-Oil Production	\$ 87,403.30	0.00	Mexico	N.A.	Petróleos Mexicanos engages in the exploration, exploitation, refining, transportation, storage, distribution, and sale of crude oil and natural gas in Mexico.	25
97	Pacific Construction Group	Engineering, Construction	\$ 86,622.60	0.08	China	N.A.	Contractor of nonresidential buildings, specializing in new construction of commercial or office buildings (100%).	6
101	China Post Group	Mail, Package, and Freight Delivery	\$ 85,627.90	-0.17	China	N.A.	China Post Group Corporation, together with its subsidiaries, provides postal services in Mainland China.	9
106	Reliance Industries	Petroleum Refining	\$ 82,331.20	0.01	India	\$84,129.88	Reliance Industries Limited engages in the hydrocarbon exploration and production, petroleum refining and marketing, petrochemicals, retail, textile, and digital service businesses worldwide.	16
107	China Energy Investment	Mining, Crude-Oil Production	\$ 81,977.70	0.42	China	N.A.	China Energy Investment Corporation Limited operates as a coal-based integrated energy company in China.	10

111	China Southern Power Grid	Utilities	\$ 80,963.60	-0.08	China	N.A.	China Southern Power Grid Co., Ltd invests in, constructs, and operates power networks in Guangdong, Guangxi, Yunnan, Guizhou, and Hainan provinces in the People's Republic of China.	15
112	China Minmetals	Metals	\$ 80,076.40	0.00	China	\$1,920.25	China Minmetals Corporation, together with its subsidiaries, engages in exploration, mining, smelting, processing, and trading for metals and minerals.	13
117	Indian Oil	Petroleum Refining	\$ 77,587.00	-0.28	India	\$22,125.48	Indian Oil Corporation Limited, together with its subsidiaries, engages in the refining, pipeline transportation, and marketing of petroleum products in India	25
119	Amer International Group	Metals	\$ 76,363.10	-0.04	China	N.A.	Amer International Group Company Ltd. operates as an industrial conglomerate in copper industry. Its segments include base metals, copper wiring, cabling, semiconductor, wafer chip manufacturing, molybdenum mining, and property development.	7
121	People's Insurance Co. of China	Insurance: Property and Casualty (Stock)	\$ 75,377.30	-0.18	China	\$54,452.98	The People's Insurance Company (Group) of China Limited, an investment holding company, primarily engages in the insurance business in the People's Republic of China.	10
129	Beijing Automotive Group	Motor Vehicles and Parts	\$ 72,677.40	-0.29	China	N.A.	Beijing Automotive Group Co., Ltd. manufactures and sells vehicles and parts in China. The company offers passenger and commercial vehicles; energy vehicles; and components.	7
130	PTT	Petroleum Refining	\$ 72,307.20	-0.07	Thailand	\$43,161.46	PTT Public Company Limited engages in upstream and downstream petroleum, coal, electricity, and infrastructure businesses in Thailand and internationally.	16
134	COFCO	Trading	\$ 71,223.30	-0.14	China	N.A.	COFCO Corporation, an investment holding company, engages in agricultural, financial, and real estate businesses in China and internationally.	25
137	CITIC Group	Diversified Financials	\$ 70,659.00	0.42	China	N.A.	CITIC Limited operates in the financial services, resources and energy, manufacturing, engineering contracting, and real estate	11

							businesses in Hong Kong, Mainland China, Macau, and internationally.	
138	China Evergrande Group	Real estate	\$ 70,478.90	0.57	China	N.A.	China Evergrande Group, an investment holding company, engages in the property development, property investment, property management, hotel operations, finance, Internet, and health businesses in the People's Republic of China.	4
139	JD.com	Internet Services and Retailing	\$ 69,847.60	0.00	China	N.A.	JD.com, Inc., through its subsidiaries, operates as an e-commerce company and retail infrastructure service provider in the People's Republic of China. It operates in two segments, JD Retail and New Businesses.	4
140	China North Industries Group	Aerospace and Defense	\$ 68,777.70	0.13	China	N.A.	China North Industries Group Corporation engages in the research and development of weapons and equipment for land forces, as well as destruction and informationized equipment for army in China.	10
141	China Telecommunications	Telecommunications	\$ 68,709.50	-0.09	China	N.A.	China Telecom Corporation Limited, together with its subsidiaries, provides wireline and mobile telecommunications services primarily in the People's Republic of China.	20
144	ChemChina	Chemicals	\$ 67,397.50	0.00	China	N.A.	China National Chemical Corporation Limited manufactures and sells various chemical products in China and internationally.	9
149	China Baowu Steel Group	Metals	\$ 66,310.00	7.21	China	N.A.	China Baowu Steel Group Corporation Limited manufactures iron and steel products. It offers carbon steel, stainless steel, special steel, and steel processing products and chemical products.	16
150	Bank of Communications	Banks: Commercial and Savings	\$ 65,644.80	0.07	China	N.A.	Bank of Communications Co., Ltd. provides banking services. The Company offers deposits, loans, domestic settlement, currency trading, and other services. B	11

Source: Authors based on data from 2019 Fortune Global 500 and Capital IQ accessed August 2019.

Chapter 2

Revisiting China and the E20

- 2.1. Revisiting the E20
- 2.2. Economic slowdown in emerging markets
- 2.3. Trends in emerging economy investments
 - A. Stability in E20 investment
 - B. A new era? Overseas investments decline in 2018
- 2.4. International trade doubts and uncertainties

Executive Summary

Chapter 2 examines trends in emerging economies as illustrated by the E20 - a group composed of 20 top emerging economies that EMI established in its first Emerging Market Multinationals Report (EMR) to illustrate the emerging market phenomenon and that we reexamine this year. In 2018, global growth recovery did not live up to expectations. Among a global slowdown, largely reflecting poor performance in advanced economies, the E20 as a whole also registered a small decline in its growth rate. As well, outward FDI from the E20 registered a slight decline while inward FDI remained relatively stable. Among the factors affecting the growth performance of emerging markets the chapter highlights the pervasive uncertainty resulting from the trade tensions that have continued virtually unabated since early 2018, and their major destabilizing impact on the global economy. As mentioned in the EMR last year, in the long term, the sustained loss of confidence in the rule-based global trade system stemming from the trade war is even more damaging than the economic losses by themselves.

2.1. Revisiting the E20

The Emerging Markets Institute (EMI) coined the term E20 in 2016 to refer a list of top 20 emerging economies in the first issue of its Emerging Markets Report (EMR), an annual publication that illustrates the evolving role and importance of emerging market companies and countries on the world stage. As a basis to establish this list, we considered the emerging economy groupings of major international organizations (the International Monetary Fund (IMF) and the United Nations (UN)) as well as those from think tanks and research institutes. To formally define the E20 for our purposes, we considered the size (as measured by nominal gross domestic product (GDP)) and weight

(in terms of demography) of each economy (**Figure 2.1**). To be included, we determined that economies must meet a threshold population size,^⑥ and be classified as emerging by at least one major international organization.^⑦

Since its first inclusion in the EMR, the makeup of the E20 has remained largely the same. Only one country, Egypt, has left the list, and Pakistan entered to replace it. Pakistan enjoyed relatively high growth during the last five years, averaging close to 5% between 2014 and 2018 (World Bank, n.d.a). In 2016, managing director of the IMF Christine Lagarde highlighted the country's promising future: "This is an important time—a moment of opportunity—for Pakistan, a country undergoing an economic transformation that can place it well among the ranks of emerging market economies," (Lagarde, 2016). Higher demand in consumption and imports, in turn fostered by public spending, drove the initial boost to Pakistan's economy. With growth rates from 2016-2018 surpassing those of Egypt, Pakistan's nominal GDP in 2018 (\$313 billion) exceeded Egypt's GDP (\$250 billion). In 2018, however, economic activity began to slow down, while inflation more than doubled compared to the previous year. Despite government measures to combat the situation, Pakistan turned to the IMF for a bailout, the 13th bailout for Pakistan in 30 years.

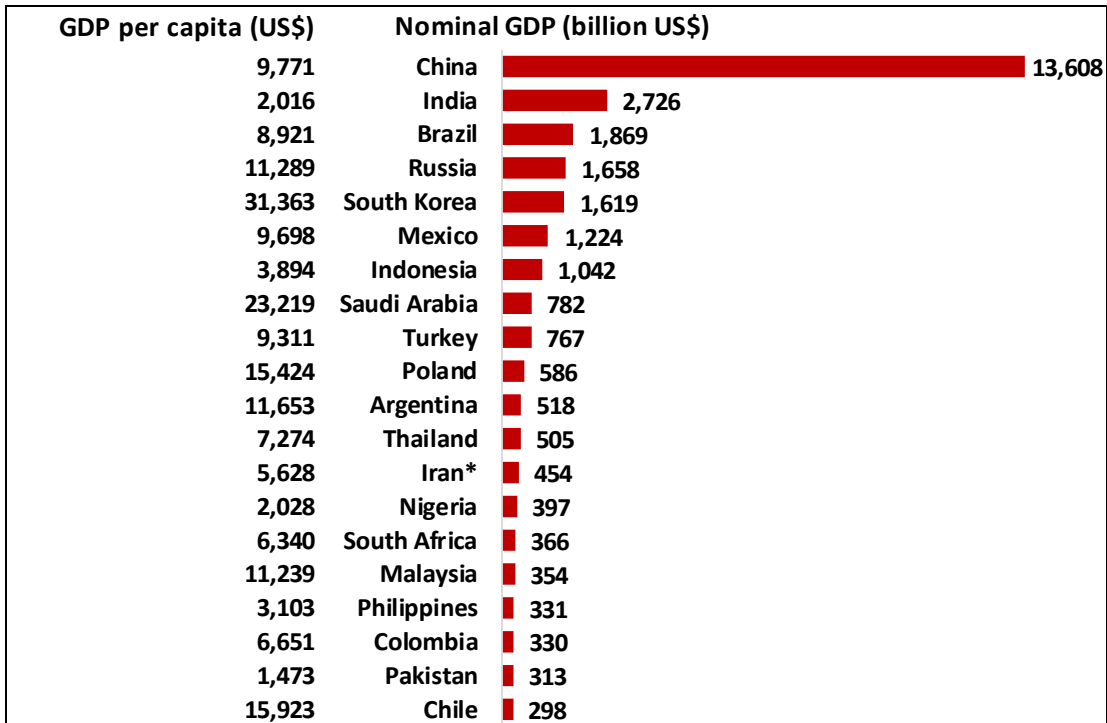
Egypt on the other hand experienced steady economic recovery since 2014, following a number of reforms and support from the World Bank, the IMF and the African Development Bank. Growth stepped up from 2.9% in 2014 to over 4% from 2015 to 2017. This improvement was driven mainly by strengthening public investment and private consumption, as well as an increase in exports, such as oil and tourism (World Bank, n.d.b).

In 2018, the E20 accounted for 48% of the world GDP on a Purchasing Power Parity (PPP) basis and comprised 60% of the world population. The E20 includes Poland and the Russian Federation as well as 18 economies from Africa, Asia and Latin America.

^⑥ Based on the small size of its populations, Qatar and the UAE did not make the list.

^⑦ From the 2016 EMR to the present edition, we referred to the lists of the IMF, the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO).

Figure 2.1. The E20 countries, ranked by nominal 2018 GDP and GDP per capita



*Values based on the previous year

Source: Authors based on data from World Bank, World Development Indicators, GDP Constant LCU, <https://datacatalog.worldbank.org/dataset/world-development-indicators>, accessed July 2019.

2.2. Economic slowdown in emerging markets

Following 2017's global economic growth rate of 3.1%, the highest since 2011,^⑧ global growth was expected to continue its recovery. By mid-2018, however, broad uncertainty weighed down global growth amid trade wars, weakening business and consumer confidence in the eurozone, and severe financial instability affecting several major emerging markets. Prospects were revised downward, and the year ended with a 3% global growth rate that was projected to slide further in 2019 (World Bank, 2019a).

The 2018 slowdown reflected the poor performance of a number of developed economies: While fiscal stimulus boosted the U.S. economy in 2018, several developed economies — Canada, Japan and Australia, but especially the eurozone and the U.K. (partly as a result of doubt surrounding a Brexit deal on business sentiment)—registered weaker performances than expected. As a result, the growth rate of developed economies declined from 2.3 to 2.1% (World Bank, 2019b).

^⑧ Real GDP growth rate, according to the World Bank (Global Economic Prospects, June 2019, Statistical Appendix and Table 1.1). When adjusted for PPP, real GDP grew by 3.8% (IMF, World Economic Outlook, April 2019).

Emerging markets and developing economies' performance did not compensate for the slowdown registered in advanced economies: Their own growth rate also declined from 4.5% to 4.3% between 2017 and 2018. China's growth slackened, and commodities prices fluctuated or dropped.

While the E20 as a whole saw a small decline in its 2018 growth rate, almost half of these countries—Chile, Colombia, Egypt, Indonesia, Nigeria, Poland, Russia, Saudi Arabia and Thailand—reported an increase (**Figure 2.2**, **Figure 2.3**, and **Appendix 2.1**) In many cases, however, the growth rate improved only modestly. Growth decelerated in several E20 economies. The drop was particularly marked in Argentina, the economy of which continued to contract, and Turkey, which registered a fall in growth rate from 7.4% to 2.7%. Both countries faced severe economic and financial instability with significant runs on their respective currencies.

Brazil, Latin America's largest economy, has been struggling to gain momentum. Growth in 2018 was 1.1%, the same as the previous year, held back by a weak labor market, a far-reaching truck drivers' strike and investment stagnation amid political uncertainty. In addition, Brazil's GDP contracted during the first semester of 2019—the first time since its 2015–2016 recession. As initial optimism subsequent to Brazil's 2018 election has been slowly waning, a lot will depend on the government's ability to pass critical reforms, especially regarding pensions. In July 2019, the Central Bank of Brazil halved its GDP growth forecast to 0.8% (Reuters, 2019). Political uncertainty also affected Mexico's performance during 2018—influenced by United States-Mexico-Canada Agreement (USCMA) negotiations and presidential elections—keeping output growth at barely 2%.

Asian countries have maintained a relatively strong growth trajectory overall, with much higher growth rates than Latin American countries. Yet, several Asian economies besides China have seen a deceleration in economic growth. Despite shifting down to a 7% growth rate, India remained the world's third fastest growing large economy. The slowdown in Chinese performance to a 6.7% growth rate came partly as a result of stricter financial regulation, and deepened further at the end of the 2018 with the intensification of the China-U.S. trade dispute.

Of the E20 countries in Africa, Nigeria was still recovering from 2016 recession levels, reaching 1.9% growth in 2018, 1.1% higher than in 2017, and driven mainly by the oil and gas industry. Saudi Arabia's recovery during 2018 was marked by a 2.2% growth rate, partly as a result of increases in oil revenues and public spending.

Figure 2.2. Growth rates of E20 and G-7 countries, 2005-2018



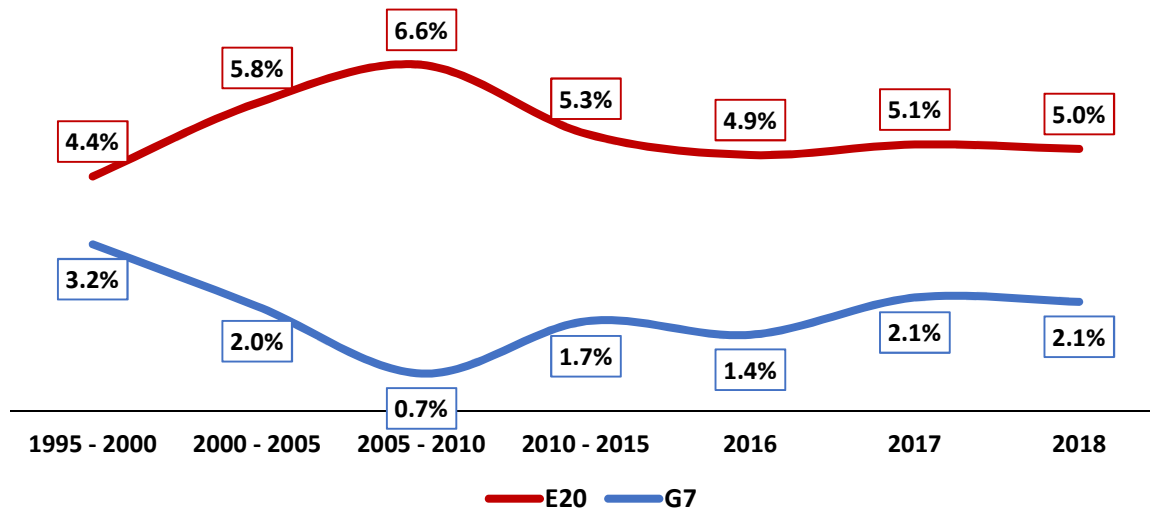
* White circle means negative growth

** Pakistan replaced Egypt in 2018

Source: Authors, based on data from Appendix 2.1.

As a result, the gap in growth rate between developed economies as illustrated by G-7 and the emerging economies of the E20, while still significant, has declined (**Figure 2.3**). This gap has been growing smaller since the 2010s, partly reflecting the poor performance of Latin America, and more recently, the deceleration of growth in China. At the same time, U.S. performance bears strongly on overall G-7 performance. Except for the U.S., no country in the G-7 reached a 2% growth rate in 2018. However, fifteen E20 economies did achieve such a rate.

Figure 2.3. E20 and G-7 growth rates



Source: Authors based on data from World Bank, World Development Indicators, GDP Constant LCU, <https://datacatalog.worldbank.org/dataset/world-development-indicators>, accessed by July 2019.

While 2018 global growth did not live up to expectations, forecasts seem even less promising for 2019. By mid-2019, the World Bank downgraded the yearly growth forecast from 2.9% — the estimated rate in January — to a projected 2.6% (World Bank, 2019b). This less-optimistic prospect was driven by trade deceleration, and subdued global investment prospects as trade tensions among major economies escalated. In the medium-term, growth prospects may rebound slightly to 2.7% and 2.8% according to forecasts for 2020 and 2021 respectively, predicated upon emerging and developing economies recovering. The World Bank forecasts growth in emerging market and developed economies to reach 4.6% from 2019-2020, 0.6 percentage points higher than in 2019. Developed economies, on the other hand, are forecast to continue a downward slide (from a projected 1.7% to 1.5% growth rate from 2019 to 2021), reflecting continued weak performance in the eurozone and Japan, and a decline in U.S. growth as the effects of its 2019 fiscal year package wanes.

Recovery prospects in 2020, however, are precarious. Investor confidence has taken a major hit among a veritable gantlet of global tensions. The continued escalation of the China-U.S. trade war, issues related to Brexit, renewed financial tightening in the context of high debt levels, and a sharper than expected deceleration in some major economies in the euro zone economies, in China or the U.S. could all contribute to a further downturn. With weak expansion projected for key economies, a realization of these downside risks could dramatically worsen the outlook, especially as conventional monetary and fiscal space is limited as a policy response.

Among the major risks facing the global economy is global debt, as already highlighted in the 2018 Emerging Market Multinationals' Report. At the time, the tightening of monetary policies in developed economies, especially the U.S., posed a serious threat for emerging economies with significant debt levels in foreign currencies—especially dollars. Indeed, higher U.S. interest rates and a rising dollar increased the debt burden of those countries, triggering massive capital flight and contributing to a steep drop in the value of their currencies. The falls of the Argentinian peso and Turkish lira were particularly dramatic, as each lost 50% and 40% of their respective value against the dollar between January and September 2018. The situation has rebounded since early 2019. The U.S. Federal Reserve has, for the time being, put an end to its interest rate increase policy, cutting the federal fund rate in August 2019, for the first time since the 2008 financial crisis. Yet, the underlying problem of high debt levels for emerging and developing economies remains (UNCTAD, 2019b).

The other major risk facing emerging economies (and the global economy) is the open trade war that erupted between the U.S. and China in early 2018 and has been escalating since then (see below). Several rounds of negotiations have taken place between the two countries over the past eighteen months—to no avail. As of September 2019, it appears that the conflict between the two major economies in the world will continue for some time. Furthermore, this is not only a trade war. Competition in the technology sector, one key to global leadership, is also a major source of tensions between the U.S. and China (see section 2.4). The respective role of each of these countries in the global economy is, in fact, what is truly at stake.

2.3. Investments in and from emerging economies continue

A. Stability in E20 investment

In 2018, FDIs inflows declined globally for the third consecutive year to \$1.3 trillion, reflecting the relatively weak global economy. The 13% decline, however, was less drastic than the previous year.

Despite lower global FDI flows, emerging markets held up. Flows to the E20, at about \$432 billion in 2018, remained at basically the same level as in 2017. They recovered to one of their highest shares of global FDI ever (33%), accounting for a third of all FDI flows (**Figure 2.4 a**). This trend reflects good FDI inflow performance by several emerging economies, especially in Asia. China saw FDI inflows increase by 4%, reaching its highest level—\$139 billion, i.e. more than 10% of the world's total—a result achieved despite trade tensions. Policy changes on foreign investment into China, and changing limits on foreign ownership contributed to this increase. As a result, in 2018 China remained the second largest recipient of FDI after the U.S (**Figure 2.4 b**). Inflows also increased to India (+6%), Indonesia (+7%), Turkey (+13%), and even more markedly in Thailand (+62%)—the latter following a four-year period of poor FDI performance. Intra-regional flows (from China, Japan and Singapore for instance) played a significant role in the increased FDI to emerging economies in Asia.

Figure 2.4. E20 inward FDI flows (USD billions) and top economies by inward FDI flows

Figure 2.4 a. Inward FDI flows in E20 countries (USD billions) and share in global flows (2000-2018)

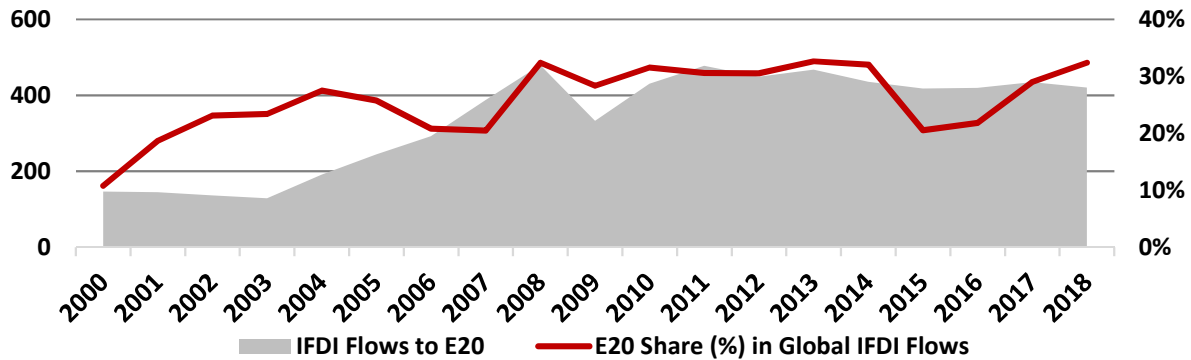
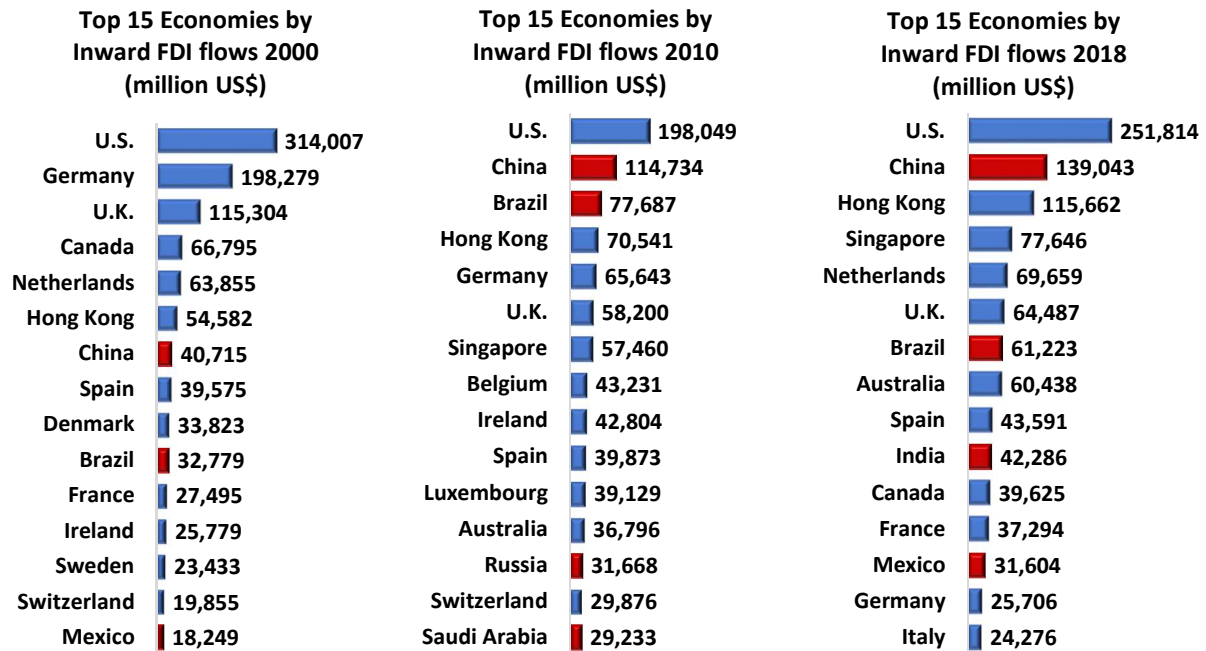


Figure 2.4 b. Comparison of top 15 economies in inward FDI flows (USD billions) in 2000, 2010 and 2018.



Source: Authors' analysis based on UNCTADstats, at <https://unctadstat.unctad.org>, and UNCTAD (2019a), accessed June 2019.

B. A new era? Overseas investments decline in 2018

2018 saw a steep drop in FDI outflows globally (-30%) to about \$1 trillion, mostly due to decreased outflows from developed economies (-40%). The latter reflected large-scale repatriations of foreign accumulated earnings by U.S. multinationals, prompted by fiscal reforms in the U.S. For the first time in decades, the U.S. was not among the top 20 global investors.

By contrast, outflows from the E20 declined by only 10%. As a result, as in the case of global FDI inflows, the share of these economies in global FDI outflows increased, jumping by 6 percentage points to 28% (Figure 2.5 a). Among the E20, increases in outward FDI from Indonesia (+290%) and Saudi Arabia were particularly important.

The slight decline in E20 FDI outflows reflects a significant drop in FDI flows from Brazil and a decrease in outward investment by Chinese firms. In Brazil, given the high borrowing costs prevailing in the country, subsidiaries of Brazilian multinationals continued to channel funds (often raised at lower costs) back to their parents. As a result, Brazil recorded massive negative outflows of \$13 billion in 2018.

China continued to lead outward investment from emerging economies, in spite of a decline (18%) in outflows for the second consecutive year, which put an end to the virtually continuous upward trend in Chinese OFDI since the early 2000s. This trend reflects a convergence of factors. On the one hand, the Chinese government took a number of measures to curb and better supervise Chinese firms’ overseas investment after massive capital outflows (in particular large-scale overseas M&As) in 2016 and 2017 (Casanova and Miroux, 2018). On the other hand, Chinese investment faces increased scrutiny from host countries — governments have grown increasingly concerned with the recent wave of Chinese investments and their pronounced interest in high tech or other sensitive sectors. A number of developed countries like the U.S., Europe and Australia have enacted screening mechanisms on inward FDI, often on national security grounds (Casanova and Miroux, forthcoming). Still, China remains one of the largest outward investors in the world (with nearly \$130 billion), ranking second behind Japan (Figure 2.5 b).

Figure 2.5. Outward FDI flows from E20 countries (USD billions), and share in global OFDI flows

Figure 2.5 a. Outward FDI flows (USD billions), in E20 countries and share in global OFDI flows (2000 - 2018)

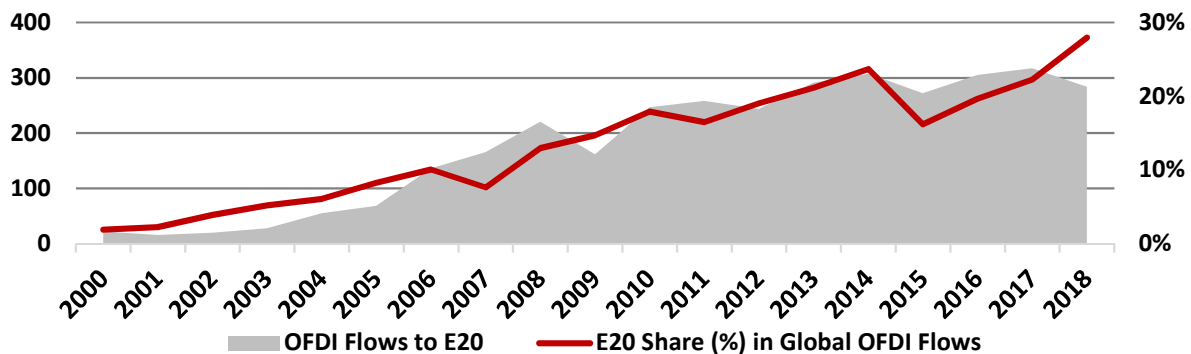
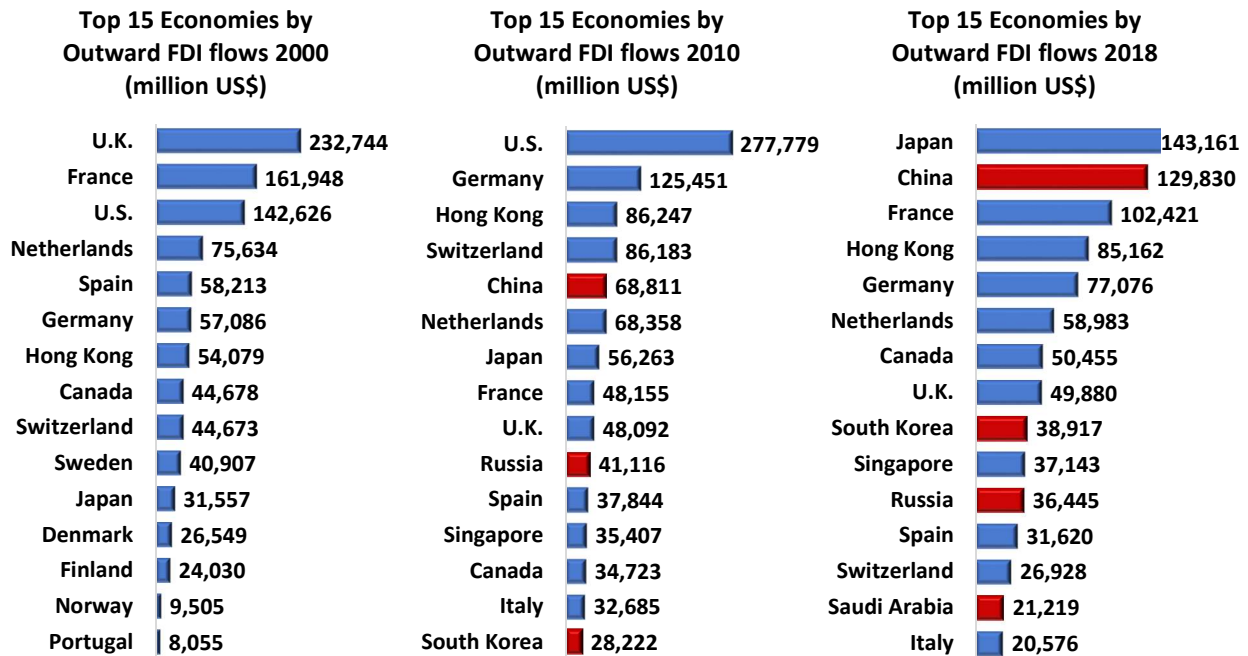


Figure 2.5 b. Comparison of top 15 economies in outward FDI flows (USD billions), in 2000, 2010 and 2018



Source: Authors' analysis based on UNCTADstats, at <https://unctadstat.unctad.org>, and UNCTAD (2019a), accessed June 2019.

2.4. International trade: doubts and uncertainties

Trade tensions between the U.S. and China erupted openly in early 2018. That March, the U.S. announced that it would impose a 25% tariff on steel imports and a 10% tariff on aluminum imports. These tariffs affected products coming from many countries—most notably China. In April, the Chinese government indicated that, should the U.S. actually impose its new tariffs on steel and aluminum, China would respond with tariffs ranging from 15% to 25% on 128 goods, including soybeans, automobiles and chemicals imports, which amounted to nearly \$3 billion. A period of negotiations ensued, with no result. Both the U.S., then Chinese, tariffs went into effect.

In April 2018, the U.S. also published lists of Chinese products that could be subject to 25% tariffs. The tariffs focused on industries targeted by the Made in China 2025 plan and included products from high tech industries such as aerospace, ICT, robotics, electrical equipment and medical equipment among others. Again, both countries attempted and failed at negotiations, and the proposed tariffs took effect: In July 2018, on a list amounting to \$34 billion, and then in August with a list amounting \$16 billion. China parried each thrust, retaliating by imposing a 25% tariff on U.S. goods worth \$34 billion and then around \$16 billion, including U.S. agricultural products, automobiles and aquatic products. The U.S. government also announced a third list of products worth \$200 billion in August 2018. The tariff of 10% on these products went into effect in September 2018. As a response, China implemented tariffs on \$60 billion worth of U.S. products.

During the G20 summit in Buenos Aires in December 2018, the U.S. and China agreed to a temporary three-month truce before escalating tariffs any further and announced the beginning of a round of trade talks. In spite of the tense atmosphere that surrounded the talks, the U.S. government postponed tariff hikes by the end of February 2019. The talks between U.S. and Chinese officials continued, and an agreement was expected by May. Nevertheless, in June, the U.S. government raised its tariffs on the third list of products, worth \$200 billion, from 10% to 25%. In addition, U.S. officials promised to establish a 25% tariff on all Chinese imports, estimated to amount to an additional \$325 billion, if China did not comply with U.S. terms to reach an agreement. China reciprocated by announcing new 25% tariffs on \$60 billion worth of U.S. products. During the G20 summit in Japan in June 2019, U.S. President Donald Trump and Chinese President Xi Jinping agreed to carry on with the negotiations and announced they did not plan to impose new tariffs for the time being (Rosenfeld, 2019). Negotiations resumed. In early August, however, the U.S. announced it would impose a tariff of 10% on the remaining \$300 billion of Chinese imports of goods and products beginning in September. If applied, this would mean that all of Chinese imports to the U.S. would be subject to new tariffs. By mid-August, the U.S. announced these new tariffs would be delayed until the end of 2019 and removed some items from the list. In September, some of the earlier announced U.S. tariffs went into effect, activating the retaliatory tariffs China had promised. That same month, both countries agreed to hold a new round of negotiations, the 13th since early 2018.

As of September 2019, no breakthrough was in sight. As noted by Eswar Prasad, former Head of the IMF's China Division and Senior Professor of Trade Policy at Cornell University, in an August 2019 New York Times article: "Both sides now seem to be settling in for a broad and unremitting trade war that will last at least through this term of Trump's presidency." (Rappeport, 2019).

Several multilateral organizations have called for an end to the trade war. According to the IMF, the tariffs have reduced trade between the U.S. and China, but the trade deficit has remained stable. While the trade war has had modest impact on global growth, it could potentially disrupt global supply chains and significantly alter economic performance in the future. IMF calculations suggest tariffs would cut global GDP by 0.3% in 2020 and cost \$455 billion in lost output, i.e., a loss larger than the size of South Africa's GDP (IMF 2019b). OECD estimations point in the same direction, suggesting that an intensification of China-U.S. trade tensions could undercut global output by 0.7% (OECD Economic Outlook, May 2019).

In addition, trade tensions are not limited to U.S.-China trade relations. The U.S. has had other challenges with some of its traditional 'closer' trade partners, as illustrated by NAFTA renegotiations between the U.S., Canada and Mexico. The new USMCA, intended to replace NAFTA, was concluded in November 2018 (see **Box 2.1**).

Tensions between the U.S. and China have also risen over each country's presence in the technology sector. Tariff hikes, export restrictions, increased control and limitations to inward investment, including restrictions on business acquisitions by foreigners all deeply affect technology-related sectors (Casanova and Miroux, 2018 and forthcoming). The case of telecoms is particularly illustrative, with the U.S. adopting several measures on national security grounds de facto targeting Chinese firms such as Huawei, which effectively prevented them from accessing

the U.S. market or acquiring technology equipment from U.S. firms. In May 2019, for instance, U.S. President Donald Trump declared a national emergency, signing an executive order forbidding U.S. companies from using foreign telecom services that could pose a national security threat. The executive order applies to all, but Chinese multinationals such as Huawei, the world leader in telecommunications equipment (see Chapter 1), will likely bear the brunt of the effects. The U.S. is encouraging other countries to adopt similar restrictions. As noted in the previous chapter, Huawei was also put on the U.S. “Entity List” in May 2019, and five other Chinese companies were added to the list in August 2019. Inclusion on the list makes it mandatory for U.S. firms to receive a government authorization before selling equipment to the listed company — which can prove quite difficult if relations with the buyer’s home country are tense. The U.S. President eased the bans on Huawei during the G20 Summit in June 2019: some American companies would still be allowed to sell their products to Huawei, but the company would remain on the U.S. trade blacklist. Yet, the extent of this exemption remained relatively unclear and in the following weeks, there was no clear indication of the reversal of Huawei’s ban (Boxall, 2019 & Duffy, 2019). As in trade, China retaliated, announcing in May 2019 that it would establish its very own list of unreliable entities to include foreign enterprises, organizations, and individuals that do not obey market rules, violate contracts, and block, cut off supply for non-commercial reasons, or severely damage the legitimate interests of Chinese companies (Bloomberg News, 2019). In June, the National Development and Reform Commission, together with other state ministries, announced that it was in the process of enacting its own national security management list (Yang, 2019).

Box 2.1. The United States-Mexico-Canada Agreement (USMCA)

The United States-Mexico-Canada Agreement (USMCA) is the result of the renegotiation of the 1994 North American Free Trade Agreement (NAFTA). Among the biggest changes it includes, are stricter labor and environmental regulations, intellectual property protections, and digital trade provisions. The agreement opens the Canadian dairy market to U.S. farmers, and extends the period that a pharmaceutical company can be protected from generic competition, which has become a sticking point while the agreement is being approved by the U.S. Congress. Among its requirements, USMCA establishes a 16-year expiration clause (a "sunset clause") for the agreement, and requires that 40 to 45% of auto components be manufactured by workers who earn a minimum of \$16 an hour; it also increases the proportion of components that must be produced in North America for tariff reductions to apply, from 62.5% under NAFTA to 75%. In addition, the agreement also includes a clause (Section 32.10) that states that a USMCA country must give three months' notice to the other two parties before negotiating a free trade agreement with any country considered a "non-market" USMCA partner. Many experts have taken this to be a direct reference to China. Under USMCA's Section 32, USMCA nations will give the opportunity to review the text of any trade deal between an USMCA partner and a non-market country before it is signed, and would retain the option of pulling out of the North American trade pact in response.

The agreement, signed by the three parties in November 2018, must be ratified following the appropriate domestic procedures before it comes into force. Until that moment, NAFTA will remain in place. In May 2019, the U.S. administration struck a deal to end steel and aluminum tariffs on Canada and Mexico, something both countries demanded if they were to pass the USMCA, clearing a major hurdle to ratification in both countries.

In June 2019, the Mexican senate approved the agreement with an overwhelming congressional majority. Canada has not yet approved the agreement, but it is expected to pass the approval process in parliament. By contrast, political division in the U.S. Congress might prove to be problematic for U.S. approval. Democrats find that the labor rule enforcement provisions and environmental protections included in the agreement are not sufficiently strong. Some Republicans have argued that the agreement limits trade opportunities, while others have blasted its sections aimed at preventing discrimination on the basis of sex, including sexual orientation and gender identity.

Congresspeople have pressed the U.S. trade representative to take concrete steps to reopen negotiations with Mexico and Canada before a vote on the agreement takes place. In spite of the concerns espoused by many legislators, the White House still planned to send the agreement to Congress by July 2019 for it to be voted on by the end of the year, without any major modification. In the meantime, political negotiations seem to be moving forward. Although U.S. President Donald Trump has threatened to withdraw from NAFTA in an effort to pressure Democrats to approve the USMCA, several Canadian and U.S. trade experts believe a withdrawal from the agreement is unlikely. As of September, approval in the U.S. Congress was still pending.

Are the days of the rule-based global trade system over?

The factors in the global environment that encouraged significant growth for a number of emerging economies has dramatically changed. In addition, 2018-2019 has seen a new slowdown in the global economy. While the IMF and World Bank expect some improvement in the medium-term, downside risks still firmly loom. As noted by the IMF, the global economy is more fragile than it was (Gopinath, 2019). One of the key reasons for this fragility is the trade war between the U.S. and China; the pervasive uncertainty that it creates has a major destabilizing impact on the global economy. As mentioned in the 2018 EMR, the authors are of the view that, in the long term, the

sustained loss of confidence in the rule-based global trade system is even more damaging than the economic losses by themselves.

Appendix 2.1. GDP growth rates and projections for E20 and G-7 countries (2005-2021)

GDP Growth	2005-2010	2010-2015	2016	2017	2018	2019f	2020f	2021f
Argentina	4.9%	1.5%	-2.1%	2.7%	-2.5%	-1.2%	2.2%	3.2%
Brazil	4.5%	1.1%	-3.3%	1.1%	1.1%	1.5%	2.5%	2.3%
Chile	3.8%	3.9%	1.7%	1.3%	4.0%	3.5%	3.1%	3.0%
China	11.3%	7.9%	6.7%	6.8%	6.6%	6.2%	6.1%	6.0%
Colombia	4.5%	4.7%	2.1%	1.4%	2.7%	3.5%	3.7%	3.7%
Egypt / Pakistan**	6.2%	2.7%	4.3%	4.2%	5.8%	3.4%	2.7%	4.0%
India	7.0%	6.5%	8.2%	7.2%	7.0%	7.5%	7.5%	7.5%
Indonesia	5.7%	5.5%	5.0%	5.1%	5.2%	5.2%	5.3%	5.3%
Iran	4.0%	-0.4%	13.4%	3.8%	-1.5%*	-4.5%	0.9%	1.0%
Malaysia	4.5%	5.3%	4.2%	5.9%	4.7%	4.6%	4.6%	4.6%
Mexico	1.5%	2.9%	2.9%	2.1%	2.0%	1.7%	2.0%	2.4%
Nigeria	7.1%	5.0%	-1.6%	0.8%	1.9%	2.1%	2.2%	2.4%
Philippines	4.9%	5.9%	6.9%	6.7%	6.2%	6.4%	6.5%	6.5%
Poland	4.8%	3.0%	3.1%	4.8%	5.1%	4.0%	3.6%	3.3%
Russia	3.5%	1.6%	0.3%	1.6%	2.3%	1.2%	1.8%	1.8%
Saudi Arabia	2.7%	5.1%	1.7%	-0.7%	2.2%	1.2%	1.8%	1.8%
South Africa	3.1%	2.2%	0.6%	1.3%	0.6%	1.1%	1.5%	1.7%
South Korea	4.1%	3.0%	2.9%	3.1%	2.7%	n.a.	n.a.	n.a.
Thailand	3.7%	3.0%	3.4%	4.0%	4.1%	3.5%	3.6%	3.7%
Turkey	3.2%	7.1%	3.2%	7.4%	2.6%	-1.0%	3.0%	4.0%
E20	6.6%	5.3%	4.9%	5.1%	5.0%	n.a.	n.a.	n.a.
Canada	1.1%	2.1%	1.1%	3.0%	1.9%	n.a.	n.a.	n.a.
France	0.8%	1.0%	1.1%	2.3%	1.7%	n.a.	n.a.	n.a.
Germany	1.2%	1.7%	2.2%	2.2%	1.4%	n.a.	n.a.	n.a.
Italy	-0.3%	-0.6%	1.1%	1.7%	0.9%	n.a.	n.a.	n.a.
Japan	0.1%	1.0%	0.6%	1.9%	0.8%	0.8%	0.7%	0.6%
U.K.	0.4%	2.1%	1.8%	1.8%	1.4%	n.a.	n.a.	n.a.
U.S.	0.9%	2.2%	1.6%	2.2%	2.9%	2.5%	1.7%	1.6%
G-7	0.7%	1.7%	1.4%	2.1%	2.1%	n.a.	n.a.	n.a.

* According to the latest data published in Global Economic Prospects (June 2019)

** Egypt replaced Pakistan in the E20 since 2018's data was released.

Source: Authors based on data from World Bank, World Development Indicators, GDP Constant LCU, and Global Development Prospects, June 2019, for the 2019-2021 forecast.

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NOTES

¹ Based on the small size of its populations, Qatar and the UAE did not make the list.

² From the 2016 EMR to the present edition, we referred to the lists of the IMF, the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO).

³ Real GDP growth rate, according to the World Bank (Global Economic Prospects, June 2019, Statistical Appendix and Table 1.1). When adjusted for PPP, real GDP grew by 3.8 % (IMF, World Economic Outlook, April 2019).

Chapter 3

The Global South: Chinese Investments in Latin America and Africa

- 3.1. China's economic engagement in Latin America
 - A. A new era? Overseas investments decline in 2018
 - B. Chinese lending to Latin America
- 3.2. China's economic engagement in Africa
- 3.3. Global south linkages: Belt and Road Initiative
- 3.4. Ten years that changed global trade and realigned investment

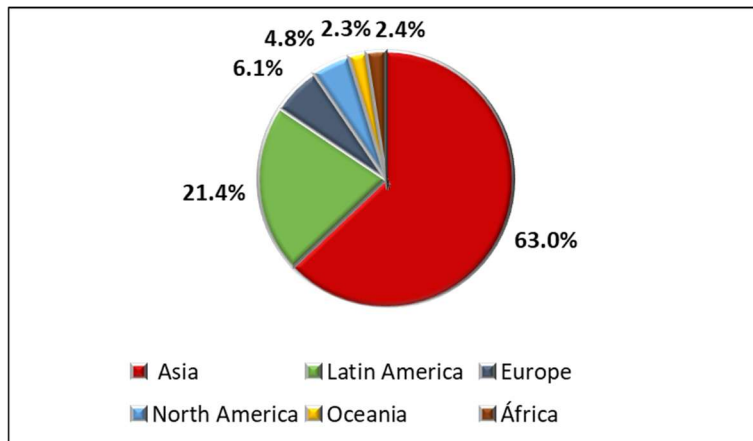
Executive Summary

Chapter 3 explores the rise of the global South through the rising economic engagement of China in Latin America and Africa. The rise of Chinese FDI on both continents is particularly illustrative of this trend. Indeed, while almost two third of China's outward foreign direct investment (FDI) stock is still invested in Asia alone, Latin America and Africa have provided fertile ground for the significant overseas expansion of Chinese multinationals. The chapter highlights the data challenges as regards Chinese OFDI and overseas lending. Based on a variety of sources it examines trends in China's outward FDI in and lending to these regions. Overall, in Latin America and the Caribbean Chinese OFDI has come to play a major role, being at par or even exceeding Chinese lending to the continent on several occasions. Though lending does not dominate the picture as it does in Africa, in some years China has been the largest source of development finance for Latin America, even surpassing that of major development banks. In Africa, lending remains the most important mode of finance from China; yet, for Africa, China is a key investment partner, the second one in term of Greenfield projects for instance.

China's internationalization has focused on emerging markets: first, in its natural market, Asia, but also in the broader global south, Africa and Latin America. While 63% of China's outward foreign direct investment (FDI) stock is invested in Asia alone, Latin America (21.4%) and Africa (2.4%) have provided fertile ground for Chinese

multinationals to expand overseas. This chapter examines this FDI trend in the context of the growing influx of Chinese investment on these two continents.

Figure 3.1. Regional share of China's outward FDI stock in 2017



Source: Authors, based on MOFCOM (2018), 2017 China's Statistical Bulletin, accessed June 2019.

3.1. China's economic engagement in Latin America

Since 2004, China was seen as the protagonist behind soaring commodity prices to build trains, roads, cities in its domestic market. As a result, Latin America experienced the rise of a new middle class, reduced poverty, and welcomed China as a new economic partner. By 2006, Brazil and China partnered together in BRICS (Brazil, Russia, India, China and South Africa), seen as a sign of a thriving new south-south economic landscape. In 2014, the agreement establishing the New Development Bank was signed during the sixth BRICS summit in Fortaleza, Brazil.

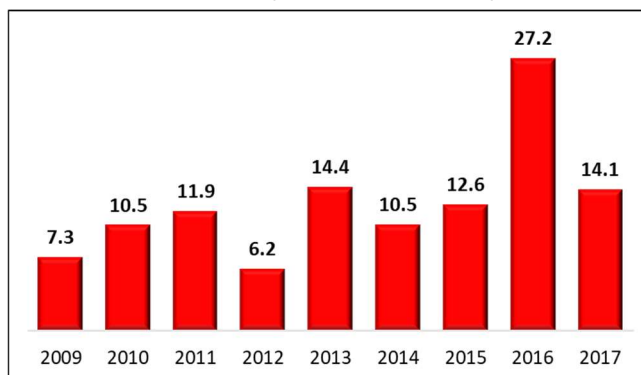
Fifteen years later, the honeymoon was over. There is considerable asymmetry in trade between China and Latin America. While the latter mostly exports primary products, the former dominates the trade of manufactured and high value-added goods. Latin America's provision of commodities accounts for 85% of the region's total exports, out of which 29% is oil, 29% iron ore, 19% soybeans, and 8% copper. China became Latin America and the Caribbean's (LAC's) second-largest trading partner, accounting for 10% of LAC's exports and 18% of its total imports. Meanwhile, China imported only 7.5% of its goods from Latin America and exported only 6% of its overall exports to the region, especially electrical machinery and equipment (21%), mechanical equipment (15%), vehicles and parts (7%).

Over the years, China also deepened its economic engagement in Latin America through increased trade, loans and investments. Since 2004, total commerce grew from \$17 billion to \$306 billion in 2018, gaining China as an important source of finance for the region in the process.

A. A new era? Overseas investments decline in 2018

In the last ten years, while trade grew, investments took off. Like other regions in the world, Latin America and the Caribbean benefitted from China’s global FDI expansion. In 2017, China’s OFDI stock in LAC reached \$387 billion, compared to \$31 billion in 2009, accounting for 21% of its total, up from 13% in 2009.^⑨

Figure 3.2. China’s annual outward FDI flows to LAC, from 2009 to 2017, in USD billions



Source: Authors based on MOFCOM (2018), 2017 China’s Statistical Bulletin of China’s Outward Foreign Direct Investment.

China FDI flows to LAC reached their peak in 2016 with an estimated \$27 billion, twice the investment average since 2010. From 2009-2017, the investments amounted to about \$115 billion according to MOFCOM, representing 11.3% of global FDI Chinese flows. For perspective, OFDI flows from China oscillated between 6.5 and 9% of FDI received by the region since 2013, with an exceptional surge of 20% of FDI in 2016 (see **Table 3.1**). Over 2014-2016, outflows from China to Latin America ranked fourth behind the U.S., Spain and the Netherlands, slightly ahead of Japan and Luxembourg. The importance of the Netherlands and Luxembourg reflects the fact that a number of multinationals route their investment through those countries for tax reasons.

Table 3.1. FDI outflows from key investor countries to Latin America 2014-2016 (USD millions)

	Total 2014-2016
U.S.	\$174,508
Netherlands	\$86,157
Spain	\$56,055
China	\$50,385
Japan	\$41,819
Luxembourg	\$37,986

Source: Authors based on national sources as reported in OECD (2019), OECD International Direct Investment Statistics 2018 for OECD countries; and MOFCOM (2018), Statistical Bulletin of China’s Outward Foreign Direct Investment 2017.

One unique feature of China’s FDI in LAC is the importance of financial centers in the Caribbean as investment destinations. Three countries alone (Antigua and Barbuda, the Cayman Islands and the British Virgin Islands) accounted for almost 90% of flows to the region from 2009-2017, based on MOFCOM data. It is likely that a

^⑨ Based on data from MOFCOM (2018).

large part of this FDI remains in the region, but it is much more difficult to determine the final destination of these flows. This problem of accurately assessing flows is not unique to Chinese FDI in Latin America but is particularly acute in this case given the large role these financial centers play in China’s OFDI flows and stocks.

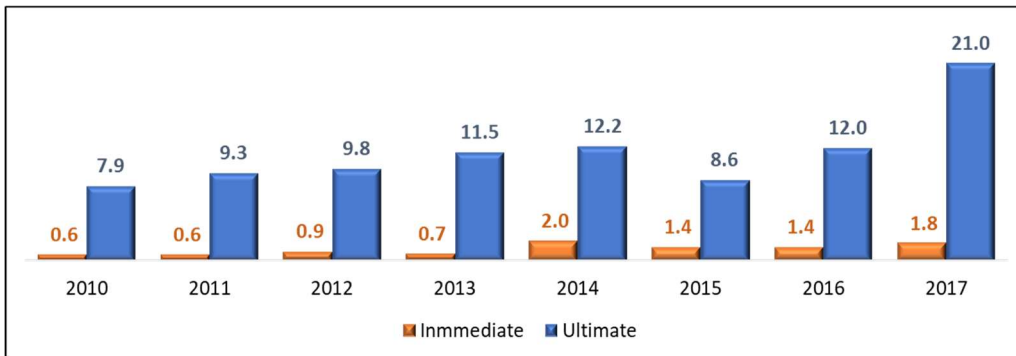
Consequently, different methodologies exist to estimate China’s FDI in Latin American countries. For instance, Banco Central do Brasil (2018) has a methodology to estimate for Brazil. The United Nations Economic Commission for Latin America and the Caribbean (ECLAC) has also calculated estimates, using another methodology (Chen and Pérez, 2014). While estimates differ, most studies put Brazil as the largest recipient, followed by Peru. Mexico and Argentina also feature among the top host countries, followed by Chile and Venezuela.¹⁰ Only a few countries, including Brazil, provide information on an ultimate investor basis (see Box 3.2).

Box 3.1. The case of Brazil—Chinese investment on an immediate and ultimate investor basis

In Brazil, more than 90% of Chinese FDI between 2010 and 2013 was channeled through intermediate countries, the most significant of which was Luxembourg (da Motta and Polónia, 2019). Brazil is one of the few emerging and developing economies that provide information on inward and outward FDI on an immediate and ultimate investor basis. The difference is substantial. China’s stock of FDI in Brazil ranked 25th in 2017; but jumps to the 9th position if one considers OFDI stocks on an ultimate investor basis. The difference when considering flows on an immediate and ultimate investor basis is similar: from 2014-2017, OFDI flows from China to Brazil amounted to \$2.4 billion on an immediate investor basis to almost \$20 billion on the basis of ultimate investor. In that respect, a large part of the gap between the two amounts came from 2017 OFDI flows—they amounted to more than half of the period’s investment on an ultimate investor basis due to significant Chinese investment in gas and electricity.

China is not the only country with a large discrepancy between immediate and ultimate investments: the U.S. invests more than any other country on an ultimate investor basis with \$119 billion (versus \$95 billion on an immediate investor basis) and Belgium ranks third with \$56 billion (versus less than \$5 billion); on the other hand, the Netherlands ranks only 5th on an ultimate investor basis at \$22 billion, but 1st on an immediate investor basis, with \$134 billion. Luxembourg’s OFDI also declines from \$50 to \$19 billion when one shifts from an ultimate from an immediate investor basis.

Figure Box 3.1: Chinese OFDI stock in Brazil—Immediate vs. ultimate investing (2010-2017)



Source: Direct Investment Report of Banco Central do Brasil, 2018, https://www.bcb.gov.br/content/publications/directinvestmentreport/2017/dir_2017.pdf, accessed July 2019.

¹⁰ See Chen and Perez Ludena (2014) for Brazil and Peru, and Avendano, Melguizo and Miner (2018).

Chinese firms' greenfield investments provide an indication of the sectoral mix of China's FDI into Latin America. While mining remains an important sector for Chinese investors, manufacturing, telecoms. and IT have increased in importance since 2014 (Ray, 2018). M&A deals enhance this picture, since they represent the largest part of Chinese FDI in the region. While extractive industries used to dominate Chinese acquisitions in Latin America, they have been overshadowed by energy, especially electricity. From 2013-2017, electricity accounted for half of the value of M&As in the region (Ray, 2018). The acquisitions China's State Grid Corp. in the Latin American electricity sector are particularly illustrative of this recent trend. Acquisitions in manufacturing also gained importance, but to a much lesser extent.

Box 3.2. Key Chinese investments in Latin America

State Grid, the second largest company in the world, entered the Brazilian market in 2010; it invested in the construction of what is now the biggest ultra-high voltage electricity line in the world between Belo Monte and São Paulo. In 2016, State Grid bought a \$4.1 billion controlling stake in the Companhia Paulista Força e Luz (CPFL) and has committed \$38 billion in investments. State Grid is also behind the initiative to build the Global Energy Interconnection Development and Cooperation Organization (GEIDCO), of which Brazil will be an important node.

In banking, ICBC bought Standard Bank of South Africa's subsidiary in Argentina in 2013, and in technology, Didi, "Chinese Uber", bought 99, the "Brazilian Uber". In the last two years, the Chinese company Tencent has invested \$180 million dollars in Nubank, a Brazilian online bank, one of the few stand-alone online banks in the world.

As of September 2019, China Mobile and Huawei announced their intention to buy Oi, the Brazilian telecom operator. In natural resources, the Chinese lithium firm Tianqi's purchased \$4 billion a stake in the Chilean company SQM in 2018.

Oil and infrastructure projects (as in Africa) have also been important areas of investment for China. Latin Americans buy Chinese Chery cars in Argentina, Brazil and Chile, Lenovo computers, DJI drones, Cree air conditioners, Hisense televisions and use Alibaba for online shopping, as well as Huawei and ZTE smartphones.

B. Chinese lending to Latin America

China's overseas lending has become a source of development finance and influence throughout the world. Based on data from the "China-Latin America Finance Database" by the Inter-American Dialogue and the Global Economic Governance Initiative at Boston University Global Development Policy Center (see **Box 3.3**), China's lending to Latin America amounted to an estimated \$141 billion from 2005 to 2018.¹¹ (Chinese lending to Africa reached a similar amount.)

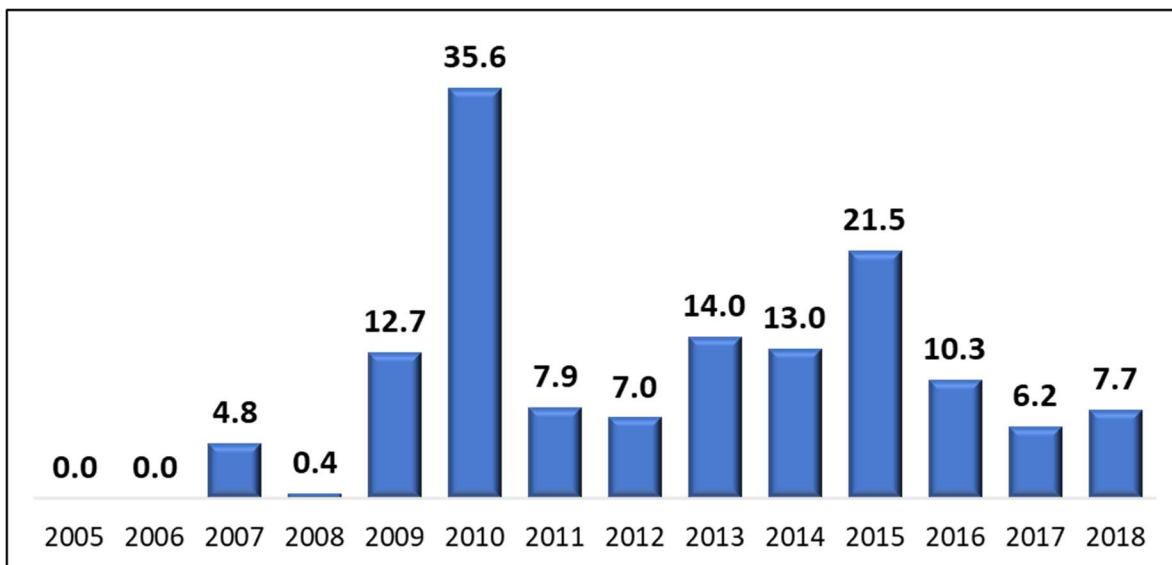
¹¹ Based on data from "China-Latin America Finance Database", Washington: Inter-American Dialogue from "China-Latin America Finance Database". Inter-American Dialogue and the Global China Initiative at Boston University Global Development Policy Center, <https://www.thedialogue.org/map_list/>, accessed July 2019.

Box 3.3. Estimating Chinese lending to Latin America

There is no official data on Chinese lending to Latin America, even on loans from Chinese government banks such as the China Development Bank (CDB) or China Eximbank. A database jointly produced by the Inter-American Dialogue and GEGI of the Global Development Policy Center at Boston University provides some insight into the amounts and patterns of China's lending to LAC. It includes CDB and Eximbank finance to LAC governments and state-owned enterprises (SOEs), as well as loans jointly made by CDB or Eximbank in cooperation with Chinese commercial banks or other international financial institutions. As noted by the databases' authors, while they go to great lengths to ensure the reliability of the data provided, their estimates should not be taken as precise figures and are revised annually.

Source: Note on methodology in Myers, M. and Gallagher, K. (2018). Down, but not out: Chinese Development Finance in LAC 2017. China-Latin America Report.

Figure 3.3. Annual China's loans to LAC from 2005 to 2018, in USD billions



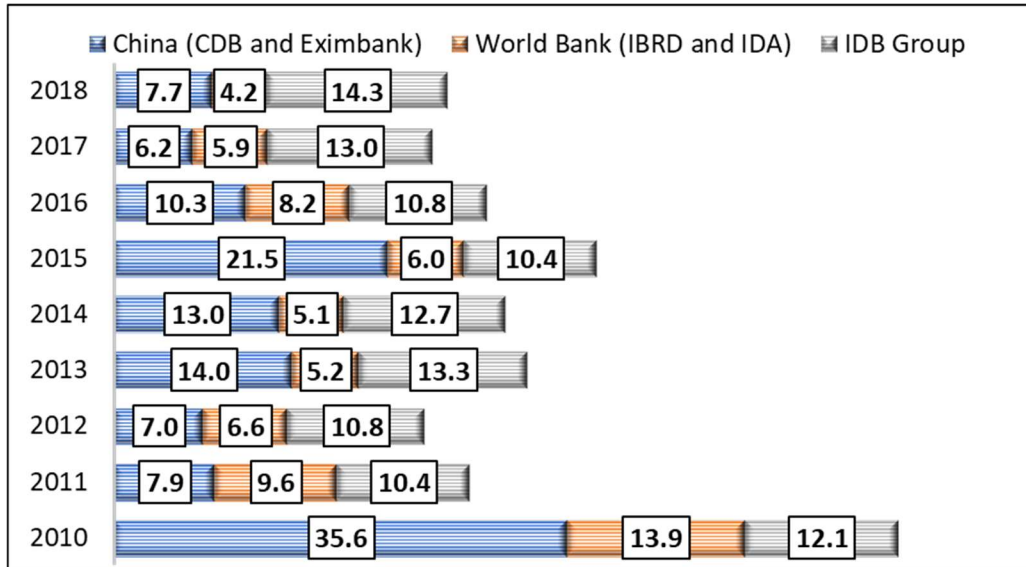
Source: Authors' analysis, based on data "China-Latin America Finance Database," Washington: Inter-American Dialogue from "China-Latin America Finance Database". Inter-American Dialogue and the Global Economic Governance Initiative at Boston University Global Development Policy Center, https://www.thedialogue.org/map_list/, accessed July 2019.

Chinese lending to Latin America from CDB and China Eximbank began in 2005 grew unevenly until spiking with a record high in 2010 (Myers and Gallagher, 2019) (Figure 3.3). Nevertheless, China has been the largest source of development finance for LAC on several occasions over the past decade, exceeding heavyweights such as the World Bank (WB) and the Inter-American Development Bank (IDB) in individual lending in the region almost every year since 2010 (see Figure 3.4).

The decline in China's state bank lending since 2015 (from \$21.5 billion to a low of \$6.2, then to \$7.7 billion in 2018, see Figure 3.3) may reflect a more cautious attitude on the part of Chinese sovereign lenders. One reason for the drop is a slowdown in the region's economies (see Chapter 2). Compared to the economic growth during the

mid-2000s in which LAC’s average annual GDP growth rate reached about 5%, LAC growth declined significantly after 2011, never exceeding one percent since 2014. Growth in a number of major economies in the region (Brazil, Argentina, or Venezuela, for instance) fell drastically, even turning negative (see **Appendix 2.1** in Chapter 2).

Figure 3.4. China’s lending, World Bank, and IDB loans to Latin America, from 2010 to 2018, in USD billions



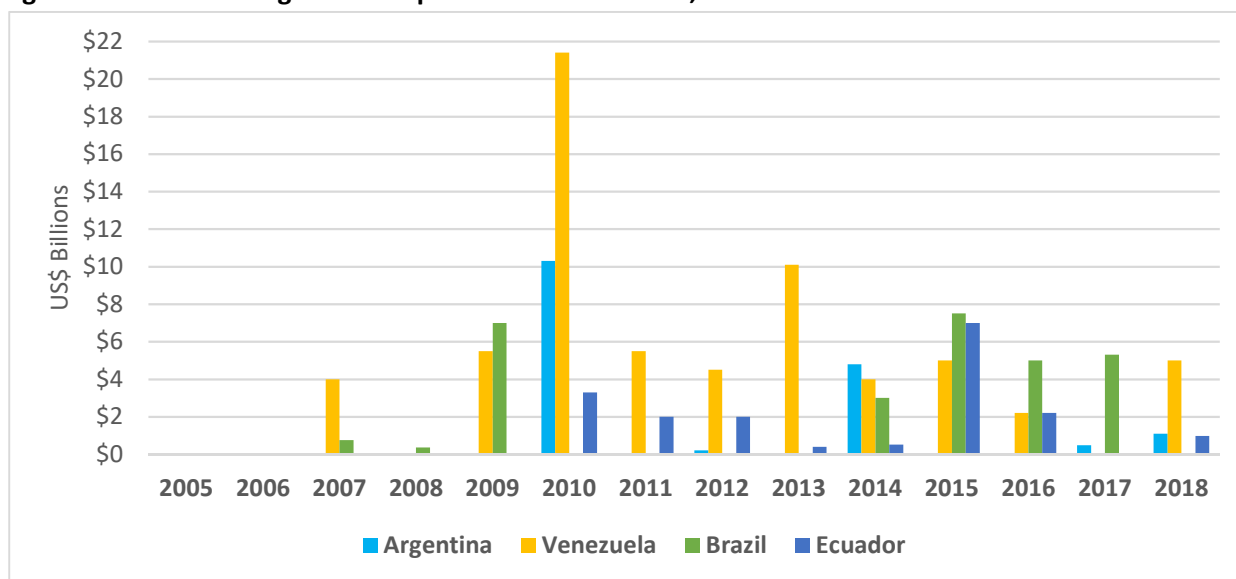
Source: Authors’ analysis based on data from China-Latin America Finance Database. Inter-American Dialogue and the Global China Initiative at Boston University Global Development Policy Center, https://www.thedialogue.org/map_list/, for China loans; and World Bank and IDB annual reports. Accessed July 2019.

Since 2005, China’s loans to LAC have mostly been to Argentina, Brazil, Ecuador and Venezuela (**Figure 3.5**). In 2017, Brazil and Argentina received 91% of total Chinese loans to LAC and, in 2018, Venezuela alone accounted for nearly two-thirds (Myers and Gallagher, 2018 and 2019). The fact that these countries did not have good credit ratings¹² and had relatively limited access to international capital markets partly explains China’s pivotal role.

Whether China will continue lending to high risk economies is unclear. The case of Venezuela is quite particular in that respect. Credit rating agencies such as Moody’s, S&P, and Fitch have rated Venezuela as a “default risk” economy since 2014. Despite this risk, Venezuela received a \$5 billion loan from China in 2018 with the possibility of repaying the loan with oil shipments. According to some observers, however, China may soon cease to be one of Venezuela’s most important sources of financial support (Myers and Gallagher, 2019).

¹² Argentina, Brazil and Ecuador have been rated by Moody’s, S&P and Fitch as “non-investment grade” (also known as speculative-grade, or “junk bonds”) in 2017-2019. Their sovereign bonds are considered to bear higher risk of default; at the same time, they pay higher yields. Venezuela is in the “default risk” category.

Figure 3.5. China’s lending to most important LAC destinations, 2005-2018



Source: Authors based on China-Latin America Finance Database. Inter-American Dialogue and the Global China Initiative at Boston University Global Development Policy Center, https://www.thedialogue.org/map_list/, accessed July 2019.

Table 3.2. China’s lending: amount and number of loans by country 2005-2018 (USD millions)

	Amount	No. of loans
Venezuela	\$67,200	18
Brazil	\$28,900	11
Ecuador	\$18,400	15
Argentina	\$16,900	11
Others*	\$ 9,700	34

*Includes Bahamas, Barbados, Bolivia, Costa Rica, Cuba, Dominican Republic, Guyana, Jamaica, Mexico, Peru, and Trinidad y Tobago.

Source: Authors based on China-Latin America Finance Database. Inter-American Dialogue and the Global China Initiative at Boston University Global Development Policy Center, https://www.thedialogue.org/map_list/, accessed July 2019.

Chinese lending to LAC from 2005-2018 concentrated both in value and number of loans on energy, especially in most recent years: this sector has accounted for two thirds of the estimated amount of loans over the period (see **Table 3.3**). This focus was partly driven by one exceptionally large loan to Venezuela (\$20 billion) in 2010 for an energy project. The infrastructure sector is the second-largest recipient of Chinese lending, followed far behind by the mining sector. A few recent examples illustrate China’s interest in energy and infrastructure. In 2017, for instance, Petrobras (a Brazilian oil company) received a \$5 billion loan in exchange for oil shipments. In 2018, Argentina received China’s support for the San Martín cargo line renovation, Ecuador will use a Chinese loan to reconstruct Eloy Alfaro International Airport in the city of Manta. Likewise, in 2018, China extended \$184 million in financing for a joint venture between China National Petroleum Corporation (CNPC) and PDVSA (Venezuela state oil company), and a further \$600 million loan to Dominican Republic State Electric Utility (CDEEE) to build the

country's electricity grid and reduce electricity losses (Myers and Gallagher, 2018 and 2019). This last loan is an example of the importance for China of electricity production and distribution, a sector also reached via FDI (see above).

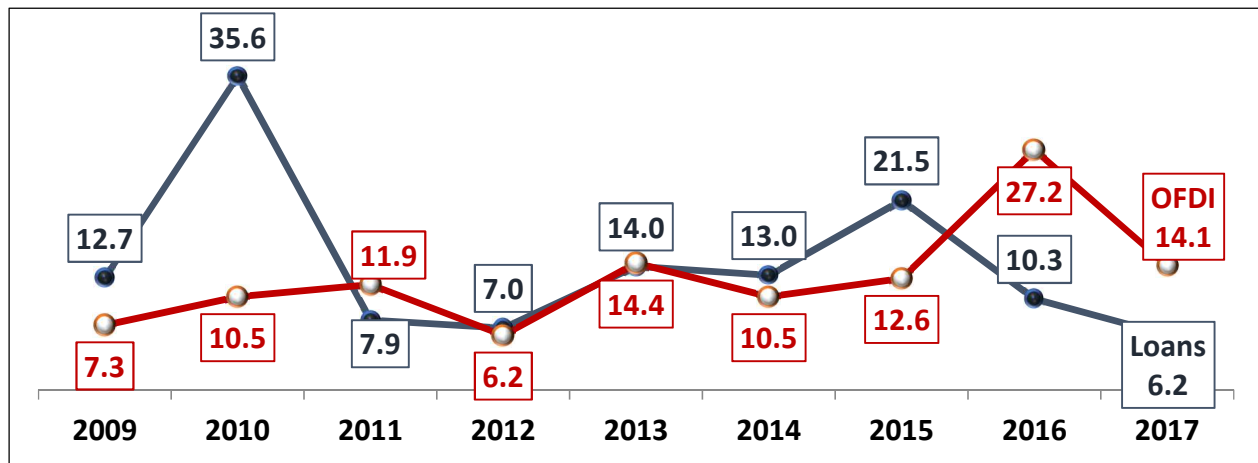
Table 3.3. Amount and number of loans by sector in LAC, 2005-2018 (USD millions)

Sector	Amount	%	No. of loans	%
Energy	\$96.900	68.7	35	39.3
Infrastructure	\$25.900	18.3	29	32.6
Other	\$16.200	11.5	22	24.7
Mining	\$2.100	1.5	3	3.4

Source: Authors' analysis based on data from China-Latin America Finance Database. Inter-American Dialogue and the Global China Initiative at Boston University Global Development Policy Center, https://www.thedialogue.org/map_list/, accessed July 2019.

More recently, Chinese state banks have partnered with multilateral banks in Latin America to mitigate the risks associated with lending in relatively fragile economies in capital-intensive sectors, which often face significant environmental or social risks. Partnering with multilateral development banks also enables Chinese banks to benefit from the extensive safeguard policies of these institutions (Myers and Gallagher, 2019).

Figure 3.6. Comparison of China's OFDI Flows and Chinese government loans from 2009 to 2017, in USD billions, to Latin America and the Caribbean.



Source: Authors based on China Statistical Bulletin, 2017; and China-Latin America Finance Database. Inter-American Dialogue and the Global China Initiative at Boston University Global Development Policy Center, https://www.thedialogue.org/map_list/, accessed July 2019.

Figure 3.6 compares China's outward FDI in LAC and Chinese bank finance (from CDB and China Eximbank) to Latin America. While the sources of these data are different, one can nevertheless observe that the amount of Chinese FDI flows has approached or even exceeded the amounts of Chinese loans to the region during several years. This trend is notably different from China's loans to Africa, where Chinese lending overwhelms its OFDI (see next

section). This reflects the recent slowdown in China’s lending from CDB and China EximBank. On the other hand, a few commercial banks such as China Construction Bank (CCB), Industrial and Commercial Bank of China (ICBC), Bank of China, and China Communications Bank are becoming increasingly active in the region, expanding in Brazil, Chile, Peru, Panama, Mexico, and Argentina (Myers and Gallagher, 2019).

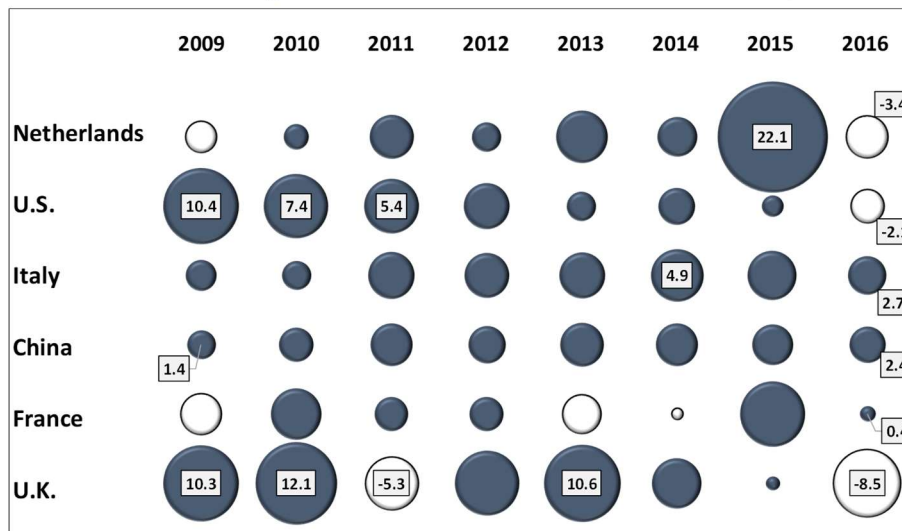
Given the exposure in lending, investment and trade, China is profoundly involved in Latin American finance. While accepting that LAC is increasingly more dependent on China than the reverse, the inter-dependence by way of investments in the service sector, banking, electricity, telecom, suggest that China will be a major player in the developments in the region moving forward.

3.2. China’s economic engagement in Africa

The U.S. and Europe long dominated trade and investment in Africa. The post-independence landscape, however, began to change with the arrival of China in the past decade. Chinese FDI flows to Africa increased significantly during the 2010s, almost tripling to \$4.1 billion over 2010-2017. Given the remarkable increase of Chinese global FDI expansion over the period, Africa’s share of China’s OFDI flows plateaued at 2.5% in 2017. This is not much different from its share of total global FDI flows (3% in 2017-2018).

The analysis that follows is based on official data published by China’s MOFCOM in its “China OFDI Statistics” annual report but does not consider small investments (less than \$10 million) and overlooks those that pass through other financial centers before arriving in Africa. Traditional investors U.K. (1st), the Netherlands (2nd), U.S. (3rd) and Italy (4th) still dominate (Figure 3.7). Compared to other regions, China still does not account for a large proportion of Africa’s OFDI stock. As of 2018 with \$ 1.7 trillion, China represented 4.1% of total investments in Africa.

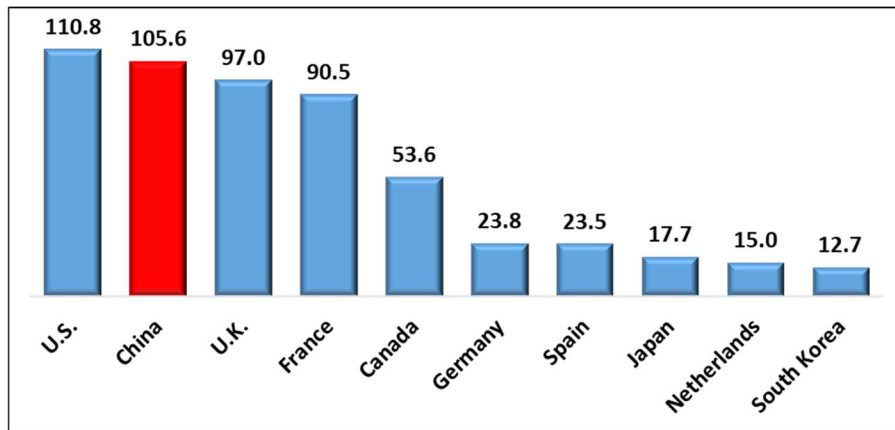
Figure 3.7. Annual OFDI flows of the largest investors in Africa between 2009 and 2016, USD billions



Source: OECD, International Direct Investment Statistics 2018, for France, Italy, U.K. and U.S. MOFCOM, 2017 China’s Statistical Bulletin of China’s Outward Foreign Direct Investment, for China.

Given that M&As tend to be relatively limited in Africa, greenfield FDI provides an informative picture. Available data on announced greenfield projects since 2003 show that China ranked second after the U.S. in announced greenfield projects on the continent from 2003-2018 (Figure 3.8), surpassing European countries.

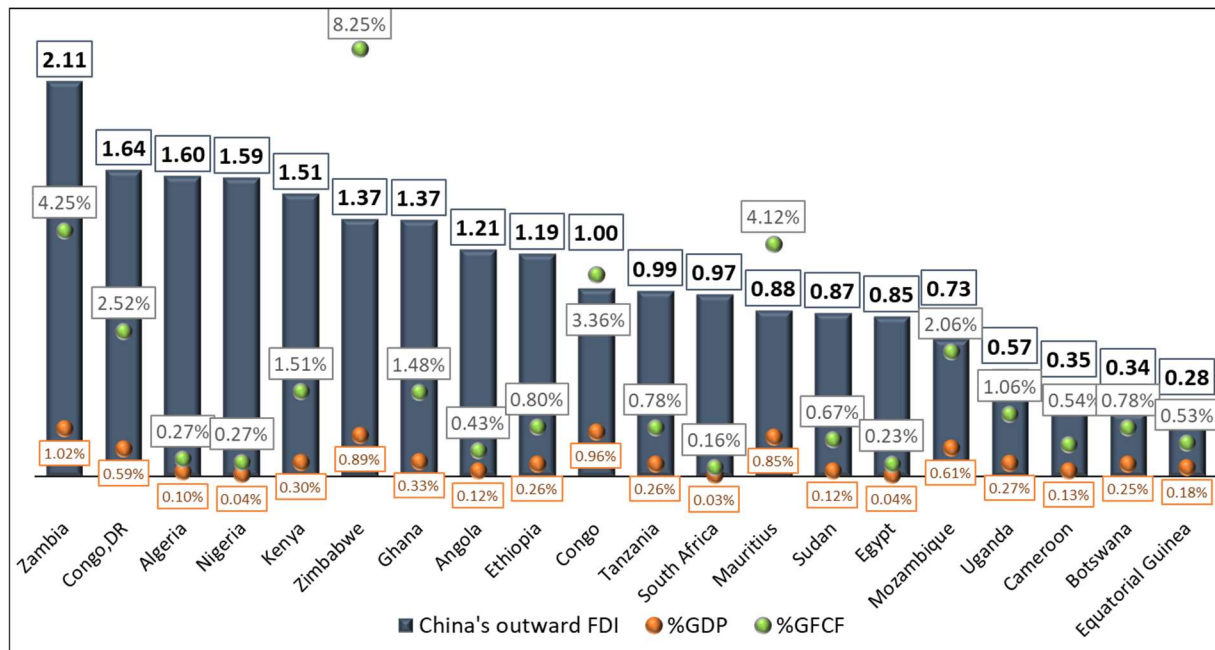
Figure 3.8. Largest investors in Africa: announced greenfield projects, 2003-2018, in USD billions



Source: Authors based on data from fDi Markets, accessed July 2019.

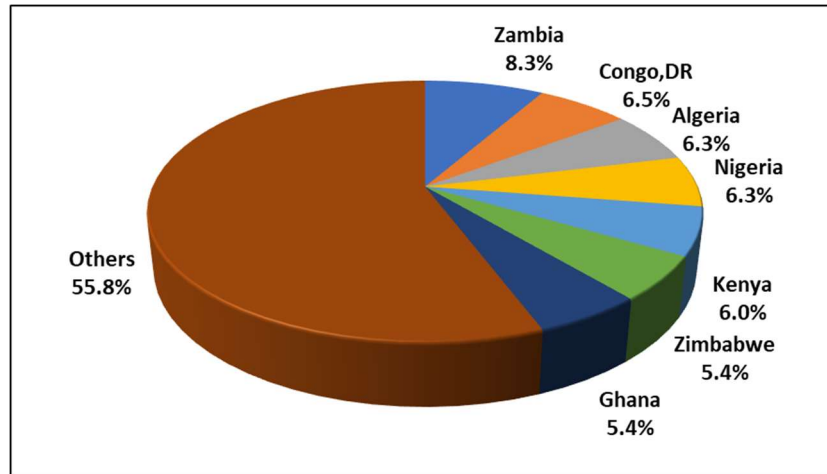
Over the past decade, Chinese FDI in Africa has been quite widely distributed: indeed, no country accounts for more than 9% of the accumulated flows from 2009-2017; Zambia's share is the largest at 8.34% (see Figure 3.9 and Figure 3.10). On a stock basis, as of 2017, the five African countries with the largest stock of FDI from China were South Africa, D.R. Congo, Zambia, Nigeria and Angola (MOFCOM, 2017).

Figure 3.9. Main African destinations by China's OFDI accumulated from 2009 to 2017 in USD billions



Source: Authors based on MOFCOM, 2017 China's Statistical Bulletin of China's Outward Foreign Direct Investment, accessed July 2019.

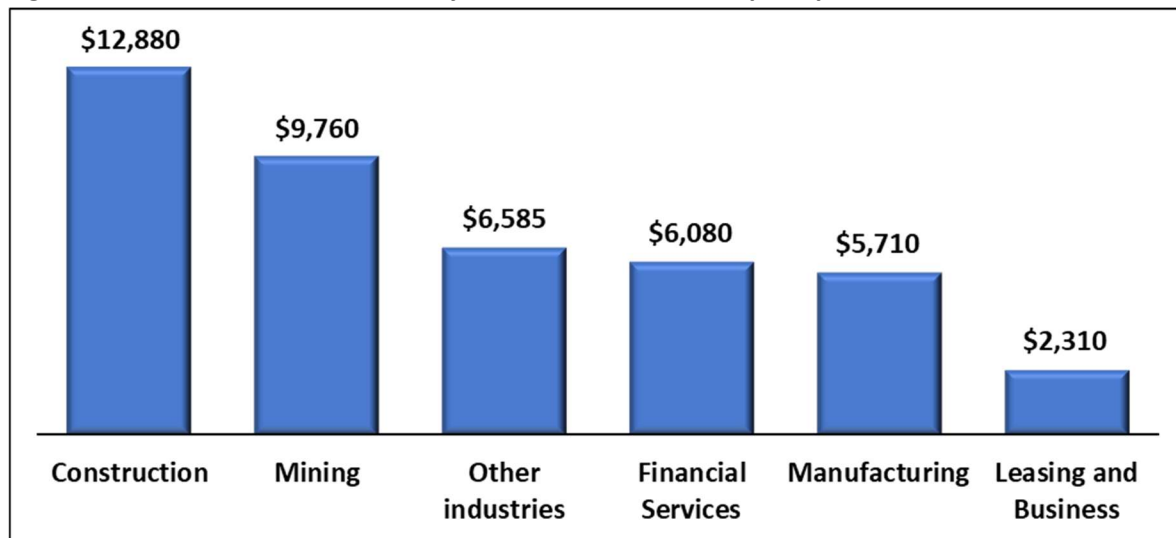
Figure 3.10. Share of the top seven African destination for China’s outward FDI from 2009 to 2017, in relation with total China’s outward FDI in Africa



Source: Authors based on MOFCOM, 2017 China’s Statistical Bulletin of China’s Outward Foreign Direct Investment, accessed July 2019.

The five industries that account for 85% of China’s OFDI stock in Africa are: construction (30%), mining (22%), financial services, manufacturing and leasing, and business services (Figure 3.11). Contrary to the perception that Chinese FDI in Africa is concentrated in natural resources, the data show diversification of FDI across different African industries. In fact, nearly 40% of Chinese total OFDI in the construction sector is in Africa.

Figure 3.11. China’s outward FDI stock by the end of 2017 in Africa, per top five industries, in USD billions



Source: Authors based on MOFCOM, 2017 China’s Statistical Bulletin of China’s Outward Foreign Direct Investment, accessed July 2019.

The importance of China’s FDI for individual African countries must not be underestimated. China financial contributions are from negligible for individual African countries. This is illustrated by comparing FDI flows from China

with the gross fixed capital formation in a particular country (using the latter as an indication of investment in the economy), or with the size of the economy as measured by its GDP.

China's broader engagement in Africa: Trading and lending

Box 3.4. The China-Africa Research Initiative (CARI)

Launched in 2014, the SAIS China Africa Research Initiative (SAIS-CARI) at the Johns Hopkins University School of Advanced International Studies was set up in 2014 “to promote evidence-based understanding of the relations between China and African countries through high quality data collection, field research, conferences, and collaboration”. Its work on, inter alia, Chinese lending patterns to Africa (through the collection and analysis of data on Chinese loans to Africa since 2007 and the creation of a database on China-Africa lending) contributes to filling this gap. Data include loans from the China Export-Import Bank, China Development Bank, Chinese commercial banks and Chinese contractors.

Source: Based on <http://www.sais-cari.org/data>, accessed August 2019.

While China's role as a foreign investor in Africa is meaningful in its own right, its importance as a lender and trade partner is even more pronounced. China has become a major source of imports for Africa, accounting for about 14% of African imports in 2018. Likewise, China is a key market for Africa, absorbing about 16% of African exports in 2018.¹³ Since 2015, China has exceeded the U.S. both in imports and exports to Africa.

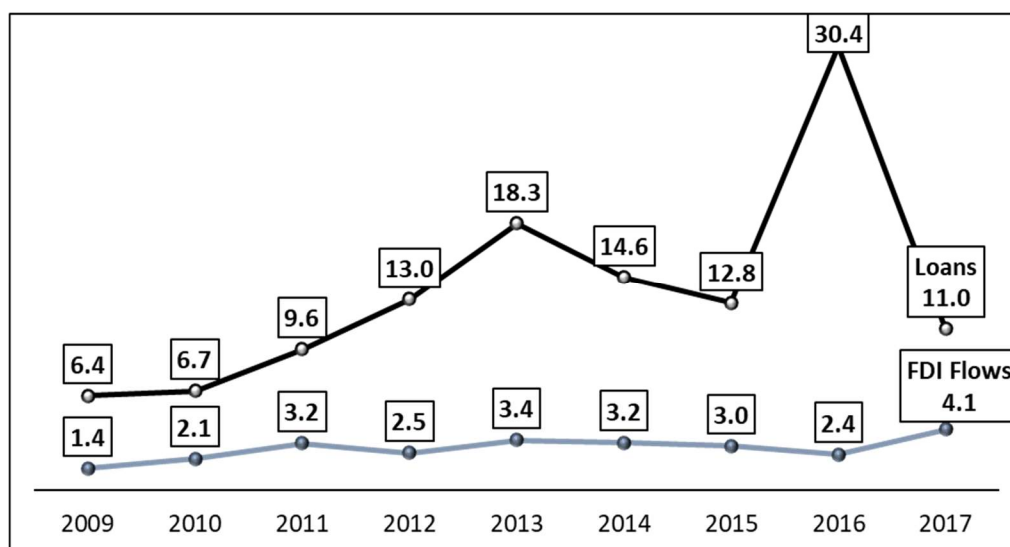
Chinese lending to Africa further illustrates the country's economic engagement with the continent. Based on data from the China-Africa Research Initiative (CARI) at the Johns Hopkins University School of Advanced International Studies (SAIS) (see Box 3.4), there has been a clear upward trend in China's lending to Africa since 2000, increasing nearly continuously from 2000-2013. Recently, lending has been more volatile; yet, at about \$11 billion in 2017, it was still over six times the level of the early 2000s. As a source of finance, China's loans to Africa have exceeded China's FDI flows to Africa (see Figure 3.12); in 2013, for instance, China's loans amounted to an estimated \$18 billion versus \$3.4 billion in FDI. Even in 2017, when the amount of loans dropped to \$11 billion, they were still nearly three times the estimated amount of Chinese FDI to Africa. From 2000-2017, China lent \$143 billion to Africa, more than what it lent to Latin America and the Caribbean (\$141 billion over the same period.)

China's lending to Africa appears to be a little more geographically concentrated than its FDI: nearly half of lending has gone to three countries: Angola (31%), Ethiopia (10%), and Kenya (7%). At lower levels, 17 countries account for between 1-5% of the total. Angola's dominant share (**Figure 3.13**) reflects an exceptionally large Chinese loan (\$20 billion) in 2016 (about 14 times the amount received the previous year). 40% of the Chinese loans to Angola were directed to the mining sector, followed by infrastructure: transport (15%) and power (8%).

¹³ Based on data from John Hopkins China-Africa Research Initiative (CARI) and UNCTAD data.

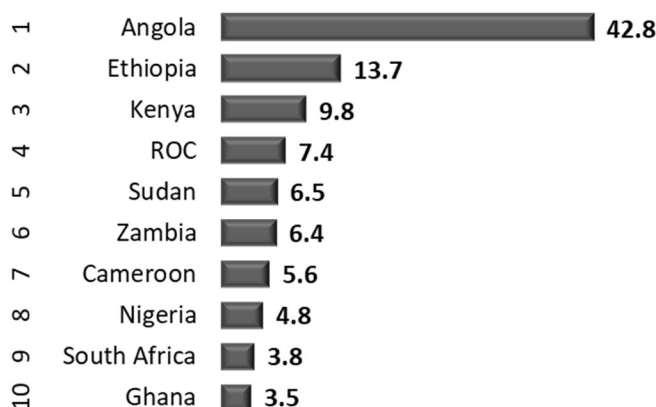
China's loans to Africa have concentrated in three sectors: transport (31%), power (24%), mining (15%). Together, they account for an estimated 70% of loans (Figure 3.14). This partly reflects Chinese interest in the infrastructure sector globally, as indicated by its leadership role in the creation of the AIIB in 2013, for which nine LAC countries are members, and in the launch of the Belt and Road Initiative (BRI) that same year (see section below).

Figure 3.12. Comparison between China's government loans and outward FDI flows to Africa, from 2009 to 2017, in USD billions



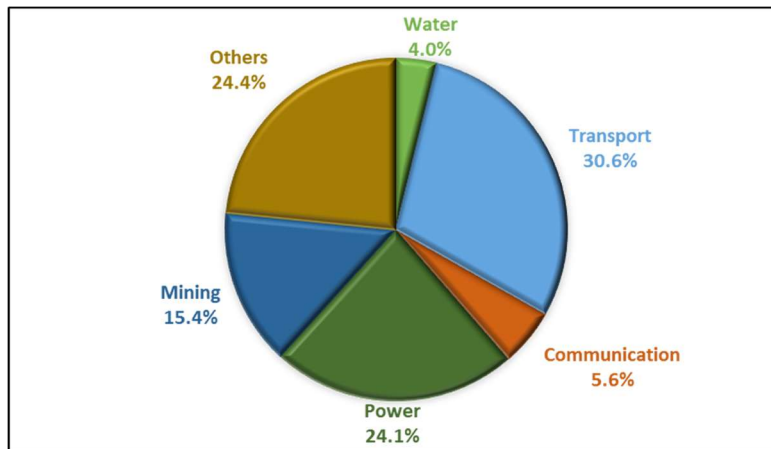
Source: Authors based on China's Statistical Bulletin and CARI data, <http://www.sais-cari.org/data-chinese-loans-to-africa>, accessed July 2019.

Figure 3.13. Top-10 African countries with the highest accumulated government loans from China, between 2000 and 2017, in USD billions



Source: Authors based on CARI data, <http://www.sais-cari.org/data-chinese-loans-to-africa>, accessed July 2019.

Figure 3.14. Share of important sector of China's government loans to Africa from 2000 to 2016



Source: Authors based on CARI data, <http://www.sais-cari.org/data-chinese-loans-to-africa>, accessed July 2019.

As shown above, while Chinese engagement in Africa has concentrated on loans and greenfield investments, China's imprint promises to grow and shape the course of Africa's economic relationship with Asia. Both are tied together.

3.3. Global south linkages: Belt and Road Initiative

China's broad economic engagement with Africa and LAC is also reflected in the expansion of the BRI, the largest infrastructure development plan in history, launched in 2013 by China's president Xi Jinping. It involves land and maritime corridors (the Belt and Road, and the Maritime Road) across Asia, Eurasia and the eastern coast of Africa (Casanova and Miroux, 2018). The initial vision of the BRI has expanded progressively to include connections to West and Central Africa as well as to Latin America and the Caribbean.

In Africa, in addition to the key BRI partners on the direct path of the Maritime Silk Road (such as Djibouti, Egypt, Ethiopia, Tanzania and Zambia), about 30 countries have signed memorandums of understanding with China to join the initiative (as of March 2019, according to the Belt and Road Portal). A number of these agreements were concluded following visits by Chinese President Xi Jinping during China-Africa Cooperation Forums. A limited number of projects are in place (such as the flagship railway line from Addis Ababa to Djibouti, or the port facilities in Djibouti, Lagos, Lomé and Abidjan), but there are several important projects planned or under construction according to three main priority areas: 1) railway lines 2) pipelines and 3) ports. Several of these projects will connect Africa's hinterland to key ports on the eastern and western coasts of the continent.

Meanwhile, in Latin America, the BRI increased its footprint in the region. Panama paved the way when it signed a memorandum of understanding in December 2017, with agreements including investment in the Colón mega-port for containers and rail. Since then, eighteen LAC members have joined the initiative, including 10 countries from Central America and Caribbean region alone (Belt and Road Portal). Though the size of many of these

investments is relatively small in some of the countries involved (such as the Bahamas, Barbados, Antigua and Barbuda), these investments have had a significant impact on local economies in the Caribbean.

3.4. Ten years that changed global trade and realigned investment

As explored in the sections above, south-south trade and investment relations have taken off, albeit unevenly. China is now leading investment, lending and trade to the global south. A rebalancing is in order, but the trendlines suggest that the asymmetry promises to continue in the years ahead.

In Latin America, lending does not dominate the Chinese financing picture as it does in Africa: FDI flows from China have on several occasions been at par or even exceeded China's state lending. Yet, Chinese lending plays an important role: in some years, China has been the largest source of development finance for the region, even surpassing that of major development banks such as the World Bank and IDB combined.

China's lending declined in Latin America in recent years, partly as a result of slowing economies in some of its major borrowers and a more cautious attitude in view of increased risks. In both continents, extractive industries continue to be an important sector for Chinese investors (whether through loans or FDI). However, the picture is changing. In Africa, construction dominates the FDI picture while energy and infrastructure lead in loans. In Latin America, by contrast, FDI has diversified towards energy (electricity), manufacturing, and IT and telecoms while China's lending focuses on energy and infrastructure.

We believe that China will continue playing an important role as a trade partner, lender and investor in both Africa and Latin America.

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Chapter 4

State Capitalism or Technology Springboard: Chinese Multinationals Influenced by Both Institutions and Resources

By Limin Chen, Wuhan University

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- 4.1. Theory and hypotheses
 - A. Complicated internationalization-performance relation needs moderating mechanism
 - B. Influence by resources on international strategy and its performance
 - C. Influence by institutions on international strategy and its performance
 - D. Internationalization-performance relation of latecomers from emerging economies
- 4.2. Methods and models
 - A. Data collection
 - B. Variables
- 4.3. Results
- 4.4. Conclusion and discussion
 - A. Contributions
 - B. Limitations and further research

Executive Summary

As Chinese outward direct investment (OFDI) has increased for 16 consecutive years, analysts have sought to determine the driving factors behind this massive growth. The stock of Chinese OFDI ranked No. 2 in 2017, behind only the U.S. This paper integrates an institution-based view and a resource-based view to investigate the impacts on Chinese multinationals from four aspects: Inner resources (firms' resource and capability), outer resources (resource-seeking motivation), inner institutions (ownership of firms), and outer institutions (sub-national institutional environment). We analyzed data from Chinese listed firms from 2009-2017 and obtained the following results: (1) Inner resources, outer resources, and outer institutions all have positive impacts on the internationalization of Chinese firms. However, inner institutions have a negative effect, i.e., state-owned enterprises (SOEs) have a lower percentage of internationalization and lower mean degree of internationalization (DOI) than private firms. (2) Institutions and resources not only have a direct impact on internationalization and performance, but also significantly moderate their relationship. Though private firms performed better than SOEs, SOEs' performance improved with higher DOI. This paper found that expanding internationally can help firms improve performance despite institutional flaws in the home country. Some research has asserted that institutional factors caused this phenomenon, and that it is the result of state capitalism, reflecting the will of the Chinese government. Other research points to resource factors: Internationalization is a springboard for Chinese firms to satisfy their technology-seeking motivations (Luo & Tung, 2007, 2018). With China's rapid development in recent years, overseas acquisitions have become increasingly necessary to meet the raw material needs of Chinese enterprises.¹⁴

Finding the true driving factors behind Chinese international expansion is of theoretical importance, as international strategy is one of the most fundamental corporate strategies. If strategic management theory's paradigm shift (Kuhn, 1962) in the last decade of the 20th century was from the industry-based view to the resource-based view, then the institution-based view is the most prominent paradigm to emerge in the 21st century (Peng, Wang, & Jiang, 2008).

The industry-based view investigates the opportunities and threats affecting firms from the outside (Porter, 1980, 1985). The resource-based view on the other hand places more emphasis on the strengths and weaknesses inside the firms. It proposes that the valuable, rare, inimitable resources which have been integrated into the organization are the source of sustainable competitive advantage (VRIO framework, Barney, 1991). However, the institution-based view asserts that besides industry-level and firm-level factors, institutional factors are important for strategy formulation. Institutions are much more than background conditions; they directly determine strategy formulation and competitive advantage (Meyer, Estrin, Bhaumik, & Peng, 2009). Institutional factors are likely to have

¹⁴ According to the *Notice on the 2018 announcement of 100 largest multinational corporations and transnational index of China* which was released by the China Enterprise Confederation and the China Enterprise Directors Association, there are six energy/material enterprises among the top 10 largest multinationals (ranked by the size of their overseas assets): No. 1 China National Petroleum Corporation, \$132 billion, No. 2 Sinopec Group, \$97 billion, No. 3 CHEMCHINA, \$96 billion, No. 6 China National Offshore Oil Corporation, \$70 billion, No. 8 Sinochem Group, \$52 billion, No. 10 China Minmetals Corporation, \$34 billion.

a strong influence on emerging economy firms, since most emerging economies are simultaneously transition economies.

This paper will study the following two questions through a theoretic perspective integrating both an institution-based view and resource-based view: (1) Why have so many Chinese firms adopted strategic global expansion? Is the reason so-called state capitalism, or technology acting as a springboard? In other words, how do institutions and resources influence Chinese firms to expand abroad? We investigated the impacts of four aspects on Chinese multinationals: Inner resources (firms' resource and capability), outer resources (resource-seeking motivation), inner institutions (ownership of firms), outer institutions (sub-national institutional environment). (2) What is the relation between internationalization and performance of Chinese enterprises? Will the relation be negative linear, the same as firms in the initial phase of internationalization; or U-shaped, the same as firms with some international experience; or reach a horizontal S-shape, the same as firms with high DOI in developed economies? How will institutions and resources affect this relationship? We studied these two questions by analyzing data from China-listed firms from 2009-2017.

4.1. Theory and hypotheses

A. Connecting internationalization to performance requires moderating factors

The relation between internationalization and performance is not only a central topic (Li & Tallman, 2011) and a key element (Goerzen & Beamish, 2003) in global strategy research, but also a subject for significant debate (Qian, Khoury, Peng, & Qian, 2010). Although classical multinational enterprise (MNE) theory considers that internationalization has a consistently positive and promotional impact on firm performance (Dunning, 1980), a large number of empirical studies have produced diversified results. These results make the research "mixed" (Hennart, 2007), "contradictory" (Geringer, Tallman, & Olsen, 2000), "inconclusive and contradictory" (Tallman & Li, 1996), or "fragmented and contradictory" (Bausch & Krist, 2007). As Glaum & Oesterle (2007) summarized, there are more questions than answers after 40 years of research on internationalization and firm performance.

We must account for key moderating factors is to better explain the various results. For example, the relation of internationalization and performance may be phase-dependent; if firms are in different internationalization phases, the positive or negative impacts on performance of internationalization are different (Lu & Beamish, 2004). In addition, the relation of internationalization and performance may be institution-dependent, that is to say, if host countries have different institutional arrangements, the impacts on performance by internationalization will change (Dau, 2013). Furthermore, the relation of internationalization and performance may be industry-dependent. If firms are in different industries, internationalization will affect performance differently (Capar & Kotabe, 2003). Finally, the relation of internationalization and performance may be location-dependent. In other words, if location choices of OFDI are different, the impacts of internationalization will also differ (Vachani,

1991): if host countries' environments are similar to those of the home countries, performance will be enhanced, but unrelated geographic diversification will diminish performance.

To take these factors into account, we established a binary moderating model of internationalization to study the impacts on international strategy of Chinese multinationals across the two key dimensions.

B. Influence of resources on international strategy and its performance

Seen from the resource-based view, a firm is a bundle of resources in a highly imperfect market. A firm's resources at a given time could be defined as those assets that are tied semi-permanently to the firm (Wernerfelt, 1984). Here "semi-permanently" means that these assets are neither totally mobile nor totally fixed. When a firm's resources coincide with the VRIO framework (Barney, 1991), the firm will have a sustainable competitive advantage.

We investigated both the inner resources and outer resources that may impact Chinese multinationals. Inner resources refer to a firm's resources and capabilities. Our analysis uses the quality of top management as the proxy variable for a firm's core resource and competence. Outer resources refer to the influences of resource-seeking motivation on firm's OFDI. We classify these motivations into technology-seeking and raw material-seeking. The first group of hypotheses are as follows:

Hypothesis 1a: Inner resources positively push international strategy. The more qualified resources and capabilities Chinese enterprises have, the higher DOI and the better performance they have.

Hypothesis 1b: Outer resources positively pull international strategy. The stronger the resource-seeking motivations for Chinese enterprises are, the higher their DOI is and the better their performance.

C. Influence by institutions on international strategy and its performance

Only considering the influences of resources is inadequate. The institution-based view asserts that additional and broader institutional factors should be considered for strategy formulation (North, 1990). Combining the institution-based view with industry- and resource-based views can answer questions such as: What drives firm strategy in IB (international business)? What determines the success and failure of firms around the world (Peng, Wang, & Jiang, 2008)? In fact, institutions are much more than background conditions, they directly determine strategy formulation and competitive advantage (Meyer, Estrin, Bhaumik, & Peng, 2009). Firms in emerging economies are apt to be influenced by institutional factors, since most emerging economies are simultaneously transition economies.

We also classified institutions into two types. Inner institutions are measured by the ownership forms of listed firms: SOEs or private enterprises. As for outer institutions, Ma, Tong, & Fitza (2013) assume that the sub-national region in a country matters to the heterogeneity of foreign subsidiary performance. We measured outer institutions by the marketization degree of 31 provinces released by the *Marketization Index of China's Provinces*:

National Economic Research Institute Report 2018 (Wang, Fan, & Hu, 2018). The second group of hypotheses are as follows:

Hypothesis 2a: Inner institutions have a significant impact on international strategy. State-owned enterprises supported by China government have higher DOI and better performance than private enterprises.

Hypothesis 2b: Outer institutions have a significant impact on international strategy. Chinese listed firms from provinces with higher marketization degree have a correspondingly higher DOI and better performance.

D. Internationalization-performance relation of latecomers from emerging economies

A large number of empirical studies about internationalization and performance relation have produced diversified results: Positive linear (Grant, 1987; Kirca, Fernandez, & Kundu, 2016), negative linear (Geringer, Tallman, & Olsen, 2000; Dau, 2013), inverted U-shaped (Hitt, Hoskisson, & Kim, 1997; Chao & Kumar, 2010), U-shaped (Lu & Beamish, 2001; Kim, Hoskisson, & Lee, 2015), horizontal S-shaped (Lu & Beamish, 2004; Chang & Wang, 2007), N-shaped (Contractor, Kundu, & Hsu, 2003; Powell, 2014), or even irrelevant (Morck & Yeung, 1991; Berry & Kaul, 2016). Different sample firms in different international periods may account for the incredibly varied results.

Early on in internationalization, firms often suffer from the liabilities of newness and foreignness (Hymer, 1960; Zaheer, 1995), therefore internationalization can have a negative impact on performance. As the firm becomes more of an insider in a particular host society, developing linkages and aligning its values and actions to the institutional requirements of the host environment, these liabilities should decline and perhaps even disappear (Zaheer, 2002). The accumulations of international experience make returns change from negative to positive gradually, so the internationalization-performance relation appears U-shaped. However, when some firms continue expanding geographically and exceed an optimal degree, they will suffer disadvantages such as organizational complexity, coordination costs, administrative difficulties, burden of information processing, inefficiency of resource allocation, etc. All these factors turn the net gains from internationalization negative again, and the internationalization-performance relation takes on a horizontal S-shape.

Chinese firms are mostly at the early or mid-period of internationalization. We assume the relation of internationalization and performance for Chinese firms is now U-shaped, and that resources and institutions will both have significant impacts on their performance. We present the third group of hypotheses as follows:

Hypothesis 3a: The internationalization-performance relation of Chinese firms appears to be U-shaped, which means a negative correlation with low DOI and a positive correlation with high DOI.

Hypothesis 3b: Resources significantly moderate the internationalization-performance relation. Both inner resources (firm's resources and capabilities) and outer resources (resource-seeking motivations) have positive impacts on this relation.

Hypothesis 3c: Institutions significantly moderate the internationalization-performance relation. Both inner institutions (state-owned enterprises) and outer institutions (sub-national marketization degree) have positive impacts on this relation.

The framework of this research is displayed in Figures 4.1a, 4.1b, 4.1c on the following page.

Figure 4.1 a.

Impact by resources & institutions on internationalization

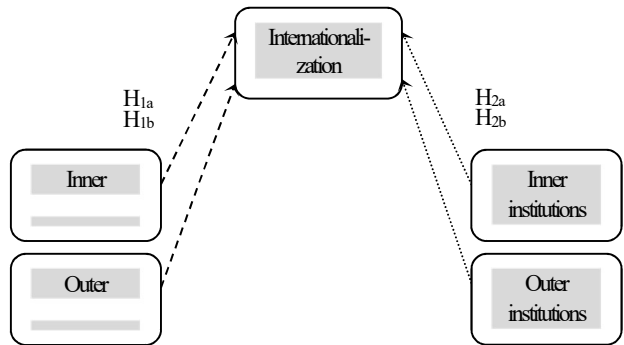


Figure 4.1 b.

Impact by resources & institutions on performance

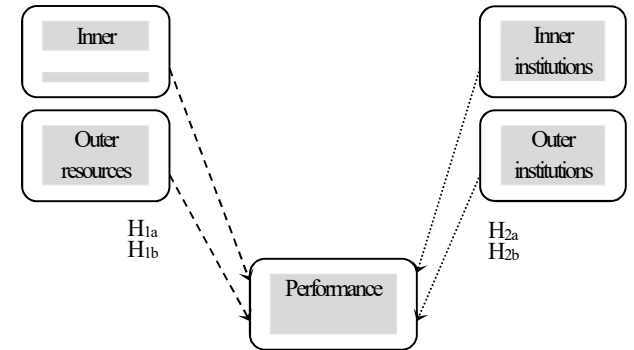
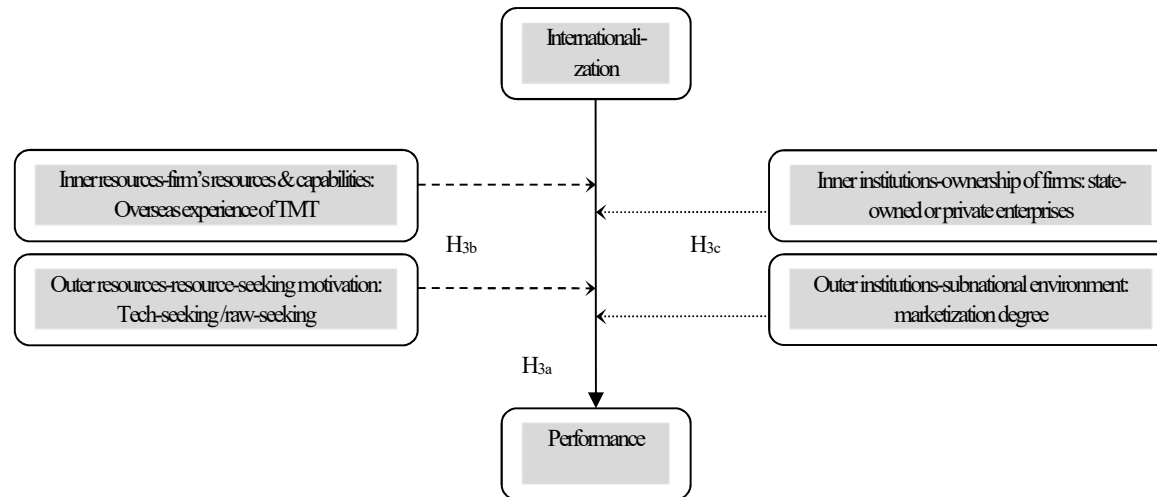


Figure 4.1 c.

Binary moderating by institutions & resources on internationalization-performance relation



4.2. Method and models

A. Data Collection

We derived our samples of Chinese firms from those that were listed on the Shanghai and Shenzhen Stock Exchange from 2009 to 2017. There are 1683 enterprises listed on the Shanghai and Shenzhen Stock Exchange that continuously operated from 2009-2017, and we screened out some of the samples based on the following considerations: (1) we removed the 56 firms that were suspended in listings for any year during 2009-2017, leaving 1,627 firms; (2) we ignored 222 firms that were faced with special treatment during any year between 2009-2017; (3) 90 firms that had a back door listing; (4) 435 firms that were missing variable data, leaving 880 firms. Finally, we have a nine-year balanced panel data yielding 7,920 observations during the period from 2009 to 2017.

B. Variables

Dependent variable: performance. We adopted Tobin's Q to measure performance on account of the following reasons: Tobin's Q is widely recognized as the most suitable indicator in the internationalization performance field. Tobin's Q is a future-oriented and risk-adjusted capital-market measure of performance that reflects both current and anticipated profitability (Li & Tallman, 2011). Additionally, Tobin's Q shows a firm's value and long-term performance (Yang & Driffield, 2012), which are better indicators for this study rather than accounting indicators that reflect the size and short-term performance of a firm. Tobin's Q is also better than the Cumulative Abnormal Return indicator, which reveals a firm's short-term performance. The third reason is that accounting indicators from Chinese firms such as return on sales (ROS), return on equity (ROE), and return on assets (ROA) can sometimes be difficult to interpret, as they may have been adjusted by the firms themselves. In comparison, the stock market is a more perfectly competitive market and the market price is relatively difficult to manipulate. The stock price can reflect the firm's performance more objectively and more truthfully. We obtained the data for Tobin's Q from the CSMAR database.

Independent variable: DOI. The most representative indicators that measure internationalization are: measures for international depth such as FSTS (foreign sales to total sales), FATA (foreign assets to total assets), and FETE (foreign employees to total employees); measures for international breadth such as OSTs (overseas subsidiaries to total subsidiaries), NOS (number of overseas subsidiaries), and NOC (number of countries hosting overseas subsidiaries); and finally, synthetic measures by multiple indices. In this paper, we chose FSTS as the indicator of internationalization, not only because it is the most commonly used indicator, but also because of the availability of that data. Most listed firms disclose their export and foreign sales information, but do not reveal the detailed information of overseas subsidiaries. As such, we cannot calculate the above-mentioned indicators of internationalization, except for FSTS. The data of foreign sales and total sales we used to calculate FSTS came from the WIND database.

Moderators: (1) Inner resources (RES-IN), referring to a firm's resources and capabilities, measured by the percentage of top management with overseas education or overseas working experience. (2) Outer resources (RES-OUT), referring to the technology-seeking (RES-OUT-TECH) or raw material-seeking (RES-OUT-RAW) motivation in firm's OFDI. The measurement indicates whether the firm belongs to the technology industry (GICS No. 35 and 45) or raw material and energy industry (GICS No. 10 and 15)¹⁵. (3) Inner institutions (INST-IN), referring to the ownership form of listed firms. We assigned 1 to this variable when firms are national state-owned or province-owned, and 0 when firms are private, foreign, public or other enterprises. (4) Outer institutions (INST-OUT), referring to the sub-national institutional environment, measured by the marketization degree of 31 provinces released by Marketization Index of China's Provinces: NERI Report 2018.

Control variables. We chose the following four control variables: (1) firm age (AGE), is the year the firm was established; (2) firm size (SIZE), is measured by the annual total assets and uses the logarithmic form; (3) capital structure (DEBT), is an important financial indicator that can affect international performance, that we use to control for variables in firm performance studies as measured by debt-to-assets ratio; (4) year effect (YEAR), is assigned on the basis of the sample period, nine years from 2009 to 2017. We controlled for the year by fixed-effect to reduce this influence. See the modeling equations and Table 4.1 in the Appendix.

4.3. Results

Descriptive Statistics

We found that: (1) The maximum of DOI is 0.853, suggesting that foreign sales revenue accounts for 85.3% of total sales. The minimum of DOI is 0, suggesting no foreign sales at all. The mean of DOI is 0.104, suggesting that foreign sales revenue accounts for 10.4% of the total sales revenue. The cross-sectional data from 2017 show similar distributions: Among 880 firms, there are 472 firms with foreign sales, and 408 firms without foreign sales. There are 334 firms whose foreign sales account for at least 5% of their total sales, and 274 firms whose foreign sales account for 10% and above. (2) Raw material-seeking firms account for 21.2% of the total samples, and technology-seeking firms account for 18.8%. SOEs account for 54.7%, while private enterprises account for 45.3%, a nearly even split. (3) The correlations of control variables with DOI and performance are all significant, so it is reasonable to introduce them into analysis. Meanwhile, the Pearson correlation coefficients are all less than 0.55, showing that there is no multicollinearity. (4) The maximum of DEBT is 1.004, showing that the total debt of a particular enterprise is larger than its total assets. This is the result after 1% winsor¹⁶, meaning that 0.5% or 38 firms have total debt that

15 The Global Industry Classification Standard (GICS) is an industry taxonomy developed in 1999 by MSCI and Standard & Poor's (S&P). The GICS structure consists of 11 sectors. No. 10 "Energy" includes energy equipment & services; oil, gas & consumable fuels. No. 15 "Materials" includes chemicals; construction materials; containers & packaging; metals & mining; paper & forest products. No. 35 "Medical & Health" includes health care equipment & services; pharmaceuticals, biotechnology & life sciences. No. 45 "Information technology" includes software & services; technology hardware & equipment; semiconductors & semiconductor equipment.

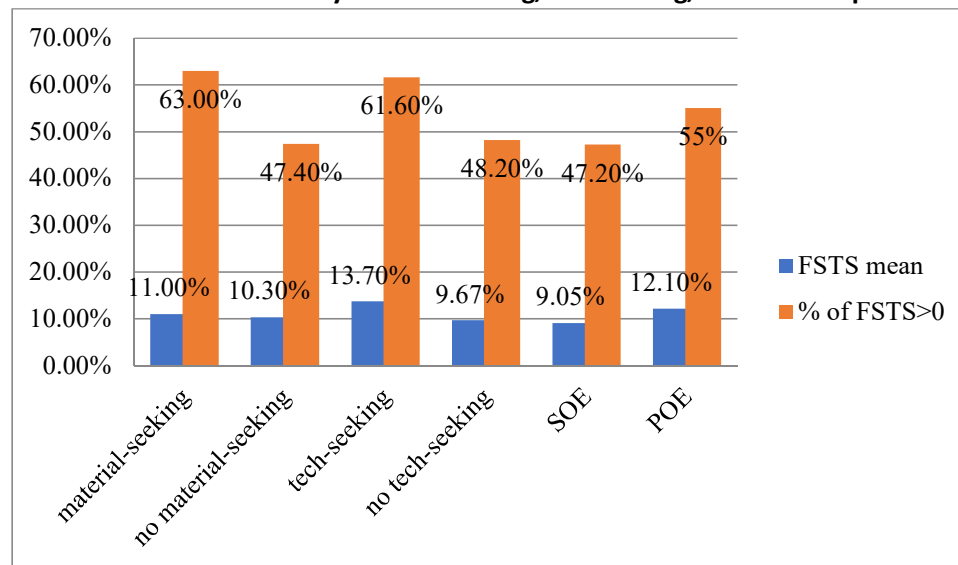
16 Besides DEBT, we winsorize PERF and DOI at the 1% level, so as to avoid too much impact on the regression results by outliers.

exceeds their total assets. (5) The three correlation coefficients larger than 0.4 all indicate interesting results: $r_{\text{DEBT-PERF}} = -0.434$, suggesting that more debt indicates poorer performance, in accordance with our expectation. However, $r_{\text{SIZE-PERF}} = -0.525$, suggests that larger firms have poor performance. Finally, $r_{\text{SIZE-DEBT}} = 0.440$, suggests that larger firms have more debt, which is logically consistent with above two correlations. See Table 4.2 in the Appendix for the full descriptive statistics and correlation matrix of all the variables for the full sample.

We calculated further descriptive statistics for the three 0/1 variables: raw material-seeking, technology-seeking, and SOEs. Shown in Figure 4.2: (1) The mean FSTS of raw material-seeking firms is 11%, which is similar to the mean FSTS of firms without material-seeking motivations (10.3%). However, the percentage of internationalized samples whose FSTS is larger than zero in firms with raw material-seeking motivations is 63%, which is much larger than the percentage of FSTS>0 in firms without raw material-seeking motivations (47.4%). Thus, the raw material-seeking motivation has a positive impact on firm's internationalization. (2) The mean FSTS of technology-seeking firms is 13.7%, which is much larger than the mean FSTS of firms without technology-seeking motivations (9.67%). Moreover, the percentage of internationalized samples whose FSTS is larger than zero in firms with technology-seeking motivations is 61.6%, much larger than the percentage of FSTS>0 in firms without technology-seeking motivations (48.2%). Therefore, the technology-seeking motivation also has a positive impact on firm's internationalization. (3) The mean FSTS of SOEs is 9.05%, which is even lower than the mean FSTS of private firms (12.1%). Moreover, the percentage of internationalized samples whose FSTS larger than zero in SOEs is 47.2%, which is also lower than the percentage of FSTS>0 in private firms (55%). Hence, the state-ownership has negative impact on firm's internationalization.

From our descriptive analysis we can conclude that resources factors, including technology-seeking and raw material-seeking motivations, have positive effects on Chinese firms' internationalization. However, contrary to our initial assumptions, state ownership has a negative effect, which suggests that private Chinese firms may fare better than SOEs in internationalization.

Figure 4.2. Influences on internationalization by material-seeking, tech-seeking, and ownership



Source: Authors based on available FSTS data.

4.4. Conclusion and Discussion

The main conclusions are as follows:

First, the internationalization-performance relation of Chinese firms appears to be U-shaped, which means there is a negative correlation with low DOI, and a positive correlation with high DOI. This U-shape was tested by multiple rigorous methods. These results indicate that the relation of internationalization and performance for Chinese firms has not reached the horizontal S-shaped relation indicative of highly internationalized firms in some advanced economies. On the other hand, a negative correlation is also significant in linear models, indicating that Chinese firms are not very far ahead of their less-developed counterparts. Chinese firms have a long way to go before they shift into an overall positive phase of international performance.

Second, institutions and resources have different influences on Chinese firms' internationalization. Inner and outer resources both have positive effects on international strategy, that is to say, firms with top management (who have had an overseas education and work experience) with material-seeking or technology-seeking motivations will have higher DOI. SOEs have lower DOI than privately-owned firms, contrary to the assumption that Chinese internationalization is strictly the result of state capitalism activities.

Third, technology-seeking and material-seeking motivations, as well as ownership model are significant factors in a firm's successful internationalization. Technology-seeking FDIs have better performance, but will have diminished premiums with higher DOI; material-seeking FDIs have worse performance but will perform better with higher DOI; private firms perform better than SOEs, but the gap lessens with higher DOI, indicating that deep internationalization can make up the institutional shortcomings of SOEs.

A. Contributions

First, we adopted a unique theoretic perspective integrating an institution-based view and a resource-based view to study the reason why internationalization has bloomed in emerging economies in recent years. By constructing four explanatory variables, we investigated the impacts of inner resources (firms' resource and capability), outer resources (resource-seeking motivation), inner institutions (ownership of firms), outer institutions (sub-national institutional environment) on internationalization.

We found that institutions and resources will affect both the degree of internationalization and also the performance outcomes of internationalization. Using institutions and resources as moderators, we established a novel binary moderating model to analyze their impacts on the internationalization-performance relation.

B. Limitations and Future Research

Though we have tried our best to rigorously design our research and perform a robust data analysis, there are still some limitations that could possibly lead this study to biased estimated results.

First, we drew conclusions based on data for Chinese firms from 2009-2017. To what degree may these conclusions apply to firms in other emerging economies? A universal conclusion can only be drawn after analyzing data from additional countries.

Next, due to data availability, we chose Chinese listed firms as sample data. In fact, many "Going Abroad" firms are not listed firms, including some influential enterprises, such as Huawei. Hence, extending the empirical study to include non-listed firms would probably reach different results from this study.

Finally, though international breadth indicators are very important and commonly used in studies, we only adopted international depth indicators to measure DOI. Furthermore, we only used one depth DOI indicator — FSTS. Though FSTS is the most commonly used indicator to reflect international operations of firms, we also adopted it because of the availability of data. Most listed firms in China disclose their information about export and foreign sales, which allowed us to calculate FSTS accurately, but did not reveal other overseas details.

Given these limitations, future research can be developed in the following directions: (1) Expanding the research to more latecomer firms from other emerging economies in order to gain more universal conclusions; (2) Expanding the research to non-listed firms to avoid potential bias; (3) Expanding the indicators of DOI, combining international breadth measurement with international depth measurement. Of course, these works may need to explore new database sources or use questionnaires, surveys, and other approaches to collect sample data.

The inner institutional factor was the only one among the four explanatory variables that was not verified by the empirical tests. How can we explain the lower degree of internationalization and worse performance of Chinese SOEs compared with private firms? First, Chinese SOEs have lots of domestic resources and support. With many opportunities to expand within China, many SOEs do not have strong motivations to go abroad for international

business. Second, SOEs have specific decision principles that can delay the process of internationalization and lower operating efficiency compared to private firms. Third, the direct government involvement can actually decrease a firm's legitimacy and identity in host countries, and may become a liability. All these are harmful to the SOEs' international operations. We think that investigation of the above-mentioned considerations could generate interesting studies in the future.

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Chapter 4 Annex

Table 4.1. Variable definition

Variable	Name	Symbol	Measurement	Data sources
Dependent variable	Performance	PERF	Tobin's Q = market value / final total assets	CSMAR database
Independent variable	Degree of Internationalization	DOI	FSTS = foreign sales / total sales	WIND database
Moderator	Inner resources	RES- IN	A firm's resources and capabilities, measured by the percentage of top management with overseas education or overseas working experience.	CSMAR database
	Outer resources	RES- OUT	Technology-seeking or raw material-seeking motivation in firm's OFDI, measured by whether the firm belongs to technology-seeking industry (GICS No. 35 and 45) or raw material and energy industry (GICS No. 10 and 15).	GICS (Global Industry Classification Standard)
	Inner institutions	INST-IN	The ownership form of listed firms. Assigned 1 when firms are national state-owned or province-owned, otherwise assigned 0.	WIND database
	Outer institutions	INST- OUT	Sub-national institutional environment, measured by the marketization degree of 31 provinces.	Report of China Provincial Marketization Degree
Control variable	Firm age	AGE	Age=year from founded	WIND database
	Firm size	SIZE	Size=ln(annual total assets)	WIND database
	Capital structure	DEBT	Debt-to-assets ratio=final total debt/final total assets	WIND database
	Year	YEAR	Assigned 9 years according to time period of samples from 2009 to 2017	Data period

Table 4.2. Descriptive statistics and correlation matrix

Variables	Max	Min	Mean	S.d.	1	2	3	4	5	6	7	8	9	10
PERF	15.45	0.164	2.220	2.283	1									
DOI	0.853	0	0.104	0.189	-0.029	1								
RES-IN	1	0	0.035	0.096	0.063	0.167	1							
RES-OUT-RAW	1	0	0.212	0.409	-0.096	0.017	-0.043	1						
RES-OUT-TECH	1	0	0.188	0.390	0.263	0.083	0.109	-0.250	1					
INST-IN	1	0	0.547	0.498	-0.212	-0.080	-0.166	0.104	-0.196	1				
INST-OUT	9.950	-0.300	7.447	1.822	-0.0004	0.152	0.088	-0.159	0.087	-0.179	1			
AGE	67	4.000	17.35	5.184	-0.054	-0.011	-0.004	-0.108	-0.042	-0.008	0.239	1		
SIZE	29.47	16.52	22.30	1.412	-0.525	-0.055	0.071	0.072	-0.177	0.166	0.112	0.145	1	
DEBT	1.004	0.064	0.485	0.213	-0.434	-0.068	-0.046	-0.002	-0.286	0.202	-0.075	0.095	0.440	1

Note: (1) N=7920. (2) $r \geq 0.03$, $p < 0.01$; $r \geq 0.025$, $p < 0.05$; $r < 0.02$, $P > 0.1$ and non-significant.

Modeling equations

Equation 1: Resources and institutions as the independent variables, DOI as the dependent.

$$DOI_{it} = \beta_0 + \beta_1 RES-IN_{it} + \beta_2 RES-OUT_{it} + \beta_3 INST-IN_{it} + \beta_4 INST-OUT_{it} + \beta_k CONTR_{it} + \lambda_t + \varepsilon_{it}$$

Equation 2: Resources and institutions as the independent, performance as the dependent.

$$PERF_{it} = \beta_0 + \beta_1 RES-IN_{it} + \beta_2 RES-OUT_{it} + \beta_3 INST-IN_{it} + \beta_4 INST-OUT_{it} + \beta_k CONTR_{it} + \lambda_t + \varepsilon_{it}$$

Equation 3: Resources and institutions as the moderators, DOI as the independent variable, performance as the dependent variable.

$$PERF_{it} = \beta_0 + \beta_1 DOI_{it} + \beta_2 RES-IN_{it} + \beta_3 RES-OUT_{it} + \beta_4 INST-IN_{it} + \beta_5 INST-OUT_{it} + \beta_6 DOI_{it} \times RES-IN_{it} + \beta_7 DOI_{it} \times RES-OUT_{it} + \beta_8 DOI_{it} \times INST-IN_{it} + \beta_9 DOI_{it} \times INST-OUT_{it} + \beta_k CONTR_{it} + \lambda_t + \varepsilon_{it}$$

Equation 4: Quadratic equation with both DOI and DOI² as the independent. Others are all the same as equation 3.

$$PERF_{it} = \beta_0 + \beta_1 DOI_{it} + \beta_2 DOI_{it}^2 + \beta_3 RES-IN_{it} + \beta_4 RES-OUT_{it} + \beta_5 INST-IN_{it} + \beta_6 INST-OUT_{it} + \beta_7 DOI_{it} \times RES-IN_{it} + \beta_8 DOI_{it} \times RES-OUT_{it} + \beta_9 DOI_{it} \times INST-IN_{it} + \beta_{10} DOI_{it} \times INST-OUT_{it} + \beta_k CONTR_{it} + \lambda_t + \varepsilon_{it}$$

Equation 5: Cubic equation with DOI, DOI² and DOI³ as the independent. Others are all the same as equation 3¹.

$$PERF_{it} = \beta_0 + \beta_1 DOI_{it} + \beta_2 DOI_{it}^2 + \beta_3 DOI_{it}^3 + \beta_4 RES-IN_{it} + \beta_5 RES-OUT_{it} + \beta_6 INST-IN_{it} + \beta_7 INST-OUT_{it} + \beta_8 DOI_{it} \times RES-IN_{it} + \beta_9 DOI_{it} \times RES-OUT_{it} + \beta_{10} DOI_{it} \times INST-IN_{it} + \beta_{11} DOI_{it} \times INST-OUT_{it} + \beta_k CONTR_{it} + \lambda_t + \varepsilon_{it}$$

Where $i = 1, 2, \dots, 880$; $t = 2009, \dots, 2017$; CONTR refers to control variables, λ_t refers to year effect, ε_{it} refers to stochastic error. The explanation of other symbols showed in Table 1.

Regression methods

At the beginning of the analysis, we made a comparison between an OLS regression and a GLS regression. Because the panel data of our research has large cross-sections and relatively short time series, there exist the possibility of heteroscedasticity. We carried out a White test, which indicated that heteroscedasticity exists in all the models. Therefore, we adopted feasible general linear squares (FGLS) to eliminate heteroscedasticity and make better estimates. According to Wooldridge (2013), the GLS method will give less weight to observations with larger variance, unlike the OLS method that gives the same weight to every observation.

In order to alleviate potential endogeneity and self-selection bias, we used a Heckman two-stage method (Wooldridge, 2013). We first estimated a Probit model to examine how the likelihood of a firm's internationalization is affected by nine antecedent variables: firm age, firm size, debt-to assets ratio, energy or raw material industry or not, technology-intensive industry or not, top management with overseas education or working experience, ownership form, provincial marketization degree, and year effect. The first-stage regression was used to rule out the potential endogeneity of internationalization

1 Since independent variables and moderating variables are often highly correlated with their interactions, we centralized all the interactions in equations 3-5 to reduce the multicollinearity.

and self-selection bias (Sun, Hu, & Hillman, 2016). The second-stage regression after correction by inverse Mills ratios was reported in Table 4.4 as the final results.

Regression with resources and institutions as explanatory variables

Table 4.3 shows the results. Models 1-4 show the influence of resources and institutions on DOI. Model 1 is the baseline model that includes control variables only. Models 2 and 3 are the models with resources and institutions, respectively. Model 4 is the model with all variables included. Similarly, models 5-8 show the influence of resources and institutions on performance. We find that:

First, the control variables of firm size and debt-to-asset ratio have negative effects on both DOI and performance, indicating that firms with larger sizes and higher debt-to-asset ratios have lower DOI and worse performance. However, firm age only has a negative effect on DOI, indicating that longer-established firms have lower DOI, but with a non-significant effect on performance.

Second, resources and institutions all have significant influences on internationalization. Inner resources, outer resources, and outer institutions all positively promote a firm's internationalization. Inner institutions, however, have a negative impact on internationalization (private firms perform better than SOEs). Technology-seeking FDIs have better performance, while material-seeking FDIs have worse performance. The impacts from outer institutions are negative but not so robust.

Finally, the Wald chi-square statistics in all models are significant, proving the model a good fit in our research. Compared with the baseline model, models with resources and institutions respectively fit better, and the models with all variables fit best. This indicates that the research design of this paper is reasonable, and that the twofold influences by both institutions and resources make sense.

Table 4.3. Influences by Resources and Institutions on Internationalization and Performance Respectively

Model 1-4: DV=DOI		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Model 5-8: DV= PERF									
control	AGE	-0.000652	-0.000267	-0.00154***	-0.00103**	-0.000560	-0.00114	-0.00121	-0.000675
		(0.000473)	(0.000470)	(0.000471)	(0.000468)	(0.00450)	(0.00447)	(0.00451)	(0.00448)
	SIZE	-0.00515***	-0.00757***	-0.00691***	-0.00992***	-0.698***	-0.692***	-0.680***	-0.676***
		(0.00173)	(0.00172)	(0.00173)	(0.00172)	(0.0165)	(0.0163)	(0.0165)	(0.0165)
	DEBT	-0.0435***	-0.0153	-0.0187*	0.00380	-2.574***	-2.214***	-2.417***	-2.150***
		(0.0112)	(0.0114)	(0.0112)	(0.0114)	(0.107)	(0.108)	(0.107)	(0.109)
explanatory	RES-IN		0.323***		0.301***		1.555***		1.319***
			(0.0218)		(0.0219)		(0.208)		(0.210)
	RES-OUT -RAW		0.0194***		0.0302***		-0.194***		-0.185***
			(0.00533)		(0.00532)		(0.0507)		(0.0510)
	RES-OUT -TECH		0.0292***		0.0259***		0.657***		0.614***
			(0.00580)		(0.00576)		(0.0552)		(0.0553)
	INST-IN			-0.0147***	-0.00419			-0.450***	-0.334***
				(0.00437)	(0.00439)			(0.0418)	(0.0421)
				0.0165***	0.0165***			-0.00641	-0.0239**

	INST-OUT			(0.00124)	(0.00123)			(0.0118)	(0.0118)
intercept	constant term	0.240***	0.255***	0.177***	0.199***	19.22***	18.79***	19.06***	18.75***
		(0.0366)	(0.0364)	(0.0364)	(0.0362)	(0.349)	(0.347)	(0.349)	(0.348)
fixed effect	year dummies	yes	yes	yes	yes	yes	yes	yes	yes
statistics	Wald chi2	49.83***	314.4***	263***	509.5***	4955***	5403***	5146***	5510***
observations	N	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920

Notes: ① *, **, *** indicate P<0.1, P<0.05, P<0.01. ② standard errors in parentheses.

Regression with resources and institutions as moderating variables

We further put DOI, performance, resources, and institutions into one regression model with moderating interactions. Table 4.4. reports the results. Model 1 is the baseline model that includes control variables only. Models 2-5 are the linear models, in which models 3 and 4 include resources and institutions as moderators respectively, and model 5 is the binary moderating model that includes all variables. Similarly, models 6-9 are the quadratic models, and models 10-13 are the cubic models, both putting in resources, institutions, and binary moderators in sequence. The regression results show that:

In all models, control variables SIZE and DEBT have negative effects, which means that firms with larger sizes and higher debt-to-asset ratios have worse performance. However, the effects of AGE are not significant, which means that a firm's age is irrelevant to performance.

Second, linear models and quadratic models are all significant, however, cubic models are not significant. These results indicate that though the relation of internationalization and performance for Chinese firms are U-shaped, they indeed have not reached the horizontal S-shaped relation period.

Third, the three 0/1 variables are significant: raw material-seeking, technology-seeking, and SOEs. RES-OUT-RAW is negative in moderator. but positive in interaction, suggesting that raw material-seeking FDIs have worse performance but will grow with higher DOI. RES-OUT-TECH is positive in moderator but negative in interaction, suggesting that technology-seeking FDIs have better performance but will decline and approach an average level along with higher DOI. INST-IN is negative in moderator but positive in interaction, suggesting that SOEs perform worse than private firms but will grow better along with higher DOI. That is to say, intensive internationalization will improve the unhealthy performance of SOEs.

Finally, the Wald chi-square statistics in all models are significant, proving the model a good fit and meaningful research results. Compared with the baseline model, models with resources and institutions respectively fit better, and the models with all variables fit best. This indicates that our research design is reasonable and valuable, the binary moderating mechanism is a good match.

Table 4.4.

Binary moderating by resources and institutions on internationalization-performance relation (estimates for Heckman second-stage models)

		Baseline model	Linear model				Quadratic model				Cubic model			
DV: Tobin's Q		1	2	3	4	5	6	7	8	9	10	11	12	13
control	AGE	0.0107**	0.0133**	0.00410	0.0123**	0.0418**	0.0122**	0.00302	0.0114**	0.0382**	0.0121**	0.00296	0.0113**	0.0383**
		(0.00480)	(0.00478)	(0.00489)	(0.00517)	(0.0159)	(0.00478)	(0.00489)	(0.00517)	(0.0159)	(0.00478)	(0.00489)	(0.00517)	(0.0159)
	SIZE	-0.710**	-0.719***	-0.700**	-0.695**	-0.678***	-0.716**	-0.698**	-0.693**	-0.677**	-0.716**	-0.698**	-0.693**	-0.677**
		(0.0165)	(0.0164)	(0.0164)	(0.0165)	(0.0165)	(0.0164)	(0.0164)	(0.0165)	(0.0165)	(0.0164)	(0.0164)	(0.0165)	(0.0165)
	DEBT	-2.468**	-2.482***	-2.230**	-2.393**	-2.416***	-2.483**	-2.225**	-2.396**	-2.396**	-2.477**	-2.221**	-2.391**	-2.394**
		(0.107)	(0.107)	(0.108)	(0.107)	(0.144)	(0.107)	(0.108)	(0.107)	(0.143)	(0.107)	(0.108)	(0.107)	(0.143)
DOI		-1.038***	-1.076**	-1.026**	-1.095***	-2.472**	-2.309**	-2.440**	-2.251**	-3.196**	-2.836**	-3.082**	-2.705**	

explanatory			(0.108)	(0.112)	(0.115)	(0.117)	(0.309)	(0.309)	(0.308)	(0.308)	(0.629)	(0.622)	(0.628)	(0.621)
	DOI2						2.244*	1.995*	2.264*	1.906*	5.325*	4.248*	5.002*	3.850
							(0.454)	(0.466)	(0.457)	(0.470)	(2.377)	(2.354)	(2.381)	(2.360)
	DOI3										-2.815	-2.069	-2.493	-1.781
											(2.131)	(2.119)	(2.128)	(2.119)
moderators	RES-IN			1.551*		-0.478		1.575*		-0.336		1.576*		-0.341
				(0.260)		(0.766)		(0.260)		(0.766)		(0.260)		(0.766)
	RES-OUT -RAW			-		-		-		-		-		-
				0.277**		1.034***		0.256**		0.962**		0.255**		0.964**
			(0.0668)		(0.315)		(0.0669)		(0.315)		(0.0669)		(0.315)	
	RES-OUT -TECH			0.622*		0.0537		0.626*		0.0916		0.626*		0.0898
				(0.0675)		(0.222)		(0.0675)		(0.222)		(0.0675)		(0.222)
	INST-IN				-		-		-		-		-	-
					0.407**		0.208***		0.403**		0.213**		0.402**	0.212**
				*				*		*		*	*	

					(0.0426)	(0.0610)			(0.0425)	(0.0609)			(0.0426)	(0.0609)	
	INST- OUT				- 0.0381* **	- 0.194***			- 0.0409* **	- 0.184** *			- 0.0416* **	- 0.185** *	
					(0.0144)	(0.0677)			(0.0144)	(0.0676)			(0.0144)	(0.0676)	
interaction	RES- IN×DOI			0.436		1.008		-0.226		0.396		-0.190		0.431	
				(0.783)		(0.797)		(0.797)		(0.810)		(0.798)		(0.811)	
	RES- OUT- RAW			0.523*		0.681**		0.738* *		0.882* **		0.699* *		0.850* **	
	×DOI			(0.296)		(0.306)		(0.300)		(0.310)		(0.302)		(0.312)	
	RES- OUT- TECH			- 0.589**		-0.483*		- 0.632**		- 0.509**		- 0.647** *		- 0.520**	
	×DOI			(0.251)		(0.253)		(0.251)		(0.253)		(0.251)		(0.253)	
	INST- IN×DOI					0.332		0.130		0.402* 0.173				0.408* 0.177	
						(0.213)		(0.214)		(0.214)		(0.214)		(0.214)	
					0.0421	0.0812				- 0.00529				-0.0122	0.0379

	INST- OUT×D OI				(0.0691)	(0.0690)			(0.0696)	(0.0696)			(0.0699)	(0.0698)
Heckman	Inverse Mills	- 0.612** *	- 0.792***	- 0.330**	- 0.709** *	- 2.421***	- 0.836** *	- 0.351**	- 0.765** *	- 2.304** *	- 0.846** *	- 0.357**	- 0.778** *	- 2.317** *
Two-stage	ratio	(0.0921)	(0.0935)	(0.144)	(0.116)	(0.859)	(0.0938)	(0.144)	(0.116)	(0.859)	(0.0940)	(0.144)	(0.117)	(0.859)
intercept	Consta nt term	19.80* **	20.22** *	19.31* **	20.08* **	21.98** *	20.25* **	19.32* **	20.15* **	21.82* **	20.27* **	19.33* **	20.17* **	21.84* **
		(0.358)	(0.359)	(0.378)	(0.377)	(1.157)	(0.359)	(0.378)	(0.377)	(1.156)	(0.359)	(0.378)	(0.377)	(1.157)
fixed effect	year dummie s	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
statistics	Wald chi2	5027** *	5178***	5615** *	5343** *	5729***	5218** *	5646** *	5384** *	5757** *	5221** *	5648** *	5386** *	5758** *
sample	N	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920

Notes: ① *, **, *** indicate P<0.1, P<0.05, P<0.01. ② standard errors in parentheses. ③ all interactions centralized to reduce the multicollinearity.

Robustness analysis

We ensure the robustness of our analysis from following several aspects: First, though we use feasible general linear squares (FGLS) to get a better estimate under heteroscedasticity, we also conduct the OLS regression. The results indicate that all the coefficients from OLS are in the same direction and significance as from FGLS. The coefficients from the two methods only have little difference in magnitude. Therefore, the regression results of this paper are robust. According to Wooldridge (2013), if the results from the two regression methods are very different, then the function forms are probably set incorrectly. On the contrary, if the results from the two regression methods are similar to each other, no proof indicates that the function forms are problematic.

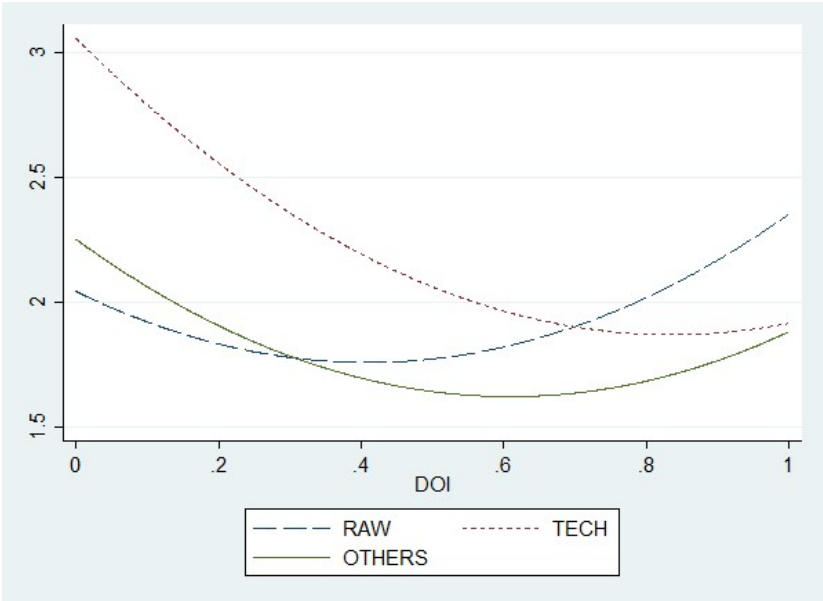
Second, the four models of the S-shaped relation can be seen as the robustness check to the U-shaped relation. Adding a cubic term (X^3) in the equation can test whether the relation is S-shaped rather than U-shaped. If the finding is that the cubic term does not improve model fit, it provides stronger support for a quadratic relation (Hanns, Pieters, & He, 2016). In our test, the cubic models 10-13 in Table 4.4 are all not significant, so the horizontal S-shape or N-shape are both excluded.

Finally, we draw figures to illustrate the U-shaped relation between internationalization and performance, because a rigorous U-shape needs figure verification (Hanns, Pieters, & He, 2016): Only the curve with the inflection point in the first quadrant is a true U-shape. Otherwise it will be a pseudo U-shape, since the inflection point in the second or third quadrant is impossible in reality. This kind of pseudo U-shape is in fact a positive linear correlation in the first quadrant.

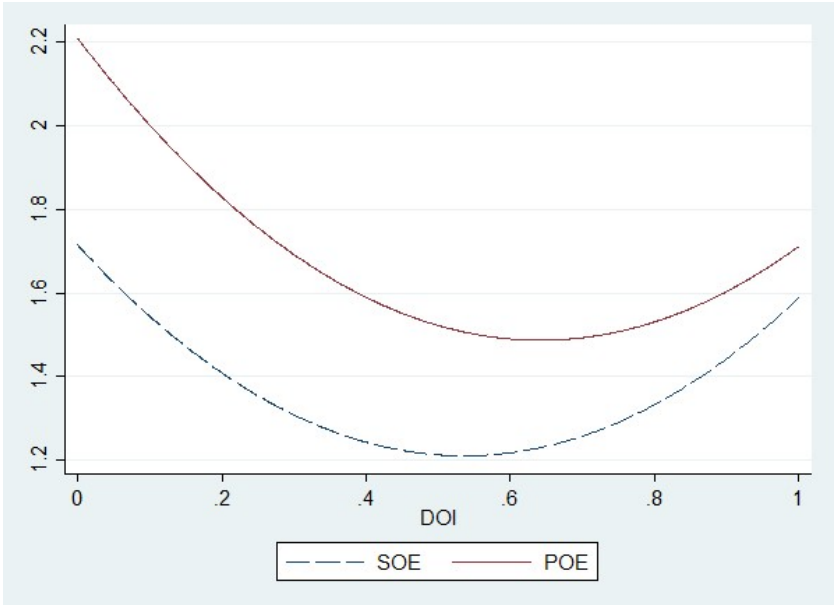
On account of this consideration, we drew the figures of models with significant moderating effects: models 7 & 8 in Figure 4.3a and model 9 in Figure 4.3b. (1) All five U-shaped curves have inflection points in the first quadrant, so they are all true U-shape instead of pseudo U-shape which are impossible in reality. (2) Figure 4.3a indicates that material-seeking FDIs have worse performance but will grow better with higher DOI, and will soon outperform others. This reveals that deep internationalization will improve the performance of material-seeking FDIs. Meanwhile, technology-seeking FDIs have better performance but will decline with higher DOI. This illustrates that after deep internationalization the tech-seeking FDIs will no longer obtain premiums. (3) Figure 4.3b indicates that SOEs have worse international performance than private firms, but the gap will become less along with higher DOI. This proves that the institutional shortcomings of SOEs will be overcome by deep internationalization.

Figure 4.3. U-shaped internationalization-performance relation and the moderating effects

4.3 a. Moderating by raw material-seeking, tech-seeking



4.3 b. Moderating by state-owned enterprise, private enterprise



Chapter 5

Mexican Multinationals

By Evodio Kaltenecker and Miguel A. Montoya, EGADE/Tecnologico De Monterrey

- 5.1. GDP growth
 - A. GDP per capita
 - B. Inbound foreign direct investment (IFDI)
 - C. Foreign direct investment regulatory restrictiveness investment (FDI RRI)
 - D. Outbound foreign direct investment (OFDI)
- 5.2. Role of the Mexican government
 - A. Impact of USMCA versus NAFTA
 - B. The U.S.-China trade war and the impacts on the Mexican economy
- 5.3. Mexican multinationals (MultiMex)
 - A. Five selected Mexican multinationals
- 5.4. Lessons from the international expansion of Mexican multinationals

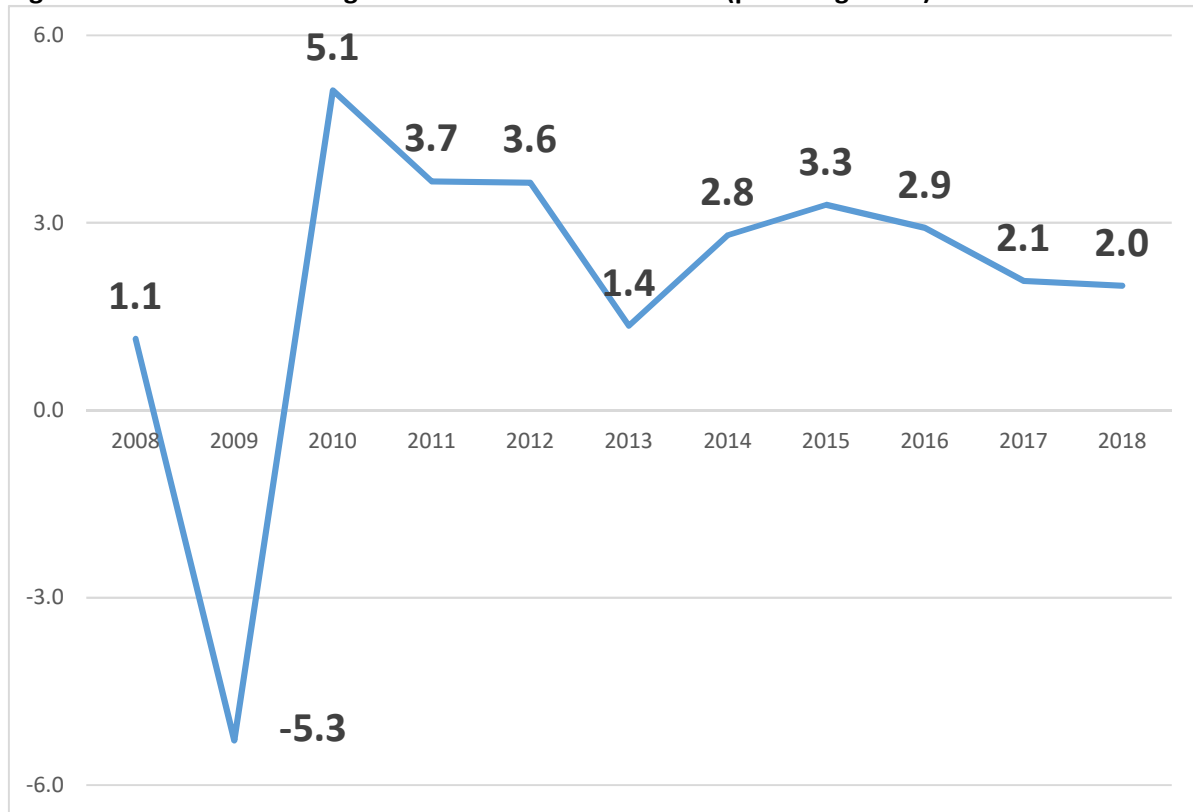
Executive Summary

Mexico is the second-largest economy in Latin America. In 2018, Mexico's population peaked at 125.929 million people (Mexico, n.d.), the 11th most populous country in the world (The World Factbook, 2018). Its 2018 nominal Gross Domestic Product (GDP) and Purchasing Power Parity (PPP) reached \$1.15 trillion and \$2.45 trillion respectively (Silver, 2019), with a projected real GDP change of 0.9% (Mexico GDP Annual Growth Rate, n.d.). Among its many particularities, two-thirds of Mexico's exports are manufactured, totaling \$419 billion (Mexico Total Exports, n.d.), with much of Mexico's industrial base firmly connected to the U.S.-based manufacturing value chains (Kaltenecker, 2018).

5.1. GDP growth

GDP growth in Mexico averaged 2.1% between 2008 and 2018. In the first quarter of 2019, the Mexican economy advanced 1.2% year-on-year, below a preliminary figure of 1.3%. This is the weakest expansion since Q1 2018, as services slowed and the industrial sector continued to shrink (Mexico GDP Annual Growth Rate, 2019). Growth is forecast to remain below 2% in 2019–20, a markdown close to one percentage point for both years. Figure 5.1 presents the economic evolution of the Mexican economy between 2008 and 2018.

Figure 5.1. The GDP annual growth rate from 2008 to 2018 (percent growth)

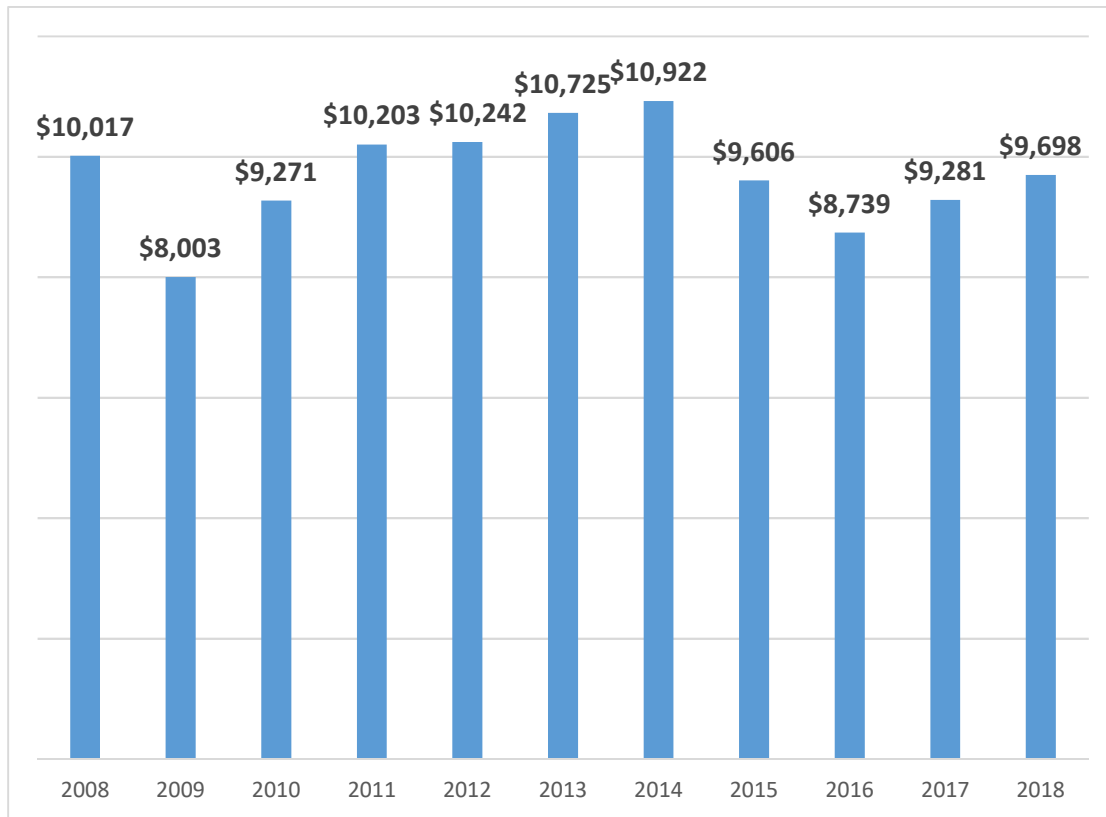


Source: Adapted from Mexico GDP Annual Growth Rate (<https://tradingeconomics.com/mexico/gdp-growth-annual>), accessed by August 2019.

A. GDP per capita

According to the World Bank (n.d.), GDP per capita in Mexico was last recorded at \$9,698 in 2018. GDP per capita in Mexico averaged \$9,700 from 2008 to 2018, approximately 86% of the world's GDP per capita of \$11,297. Figure 5.2 presents the evolution of GDP per capita in Mexico, from 2008 to 2018.

Figure 5.2. Mexico's GDP per capita



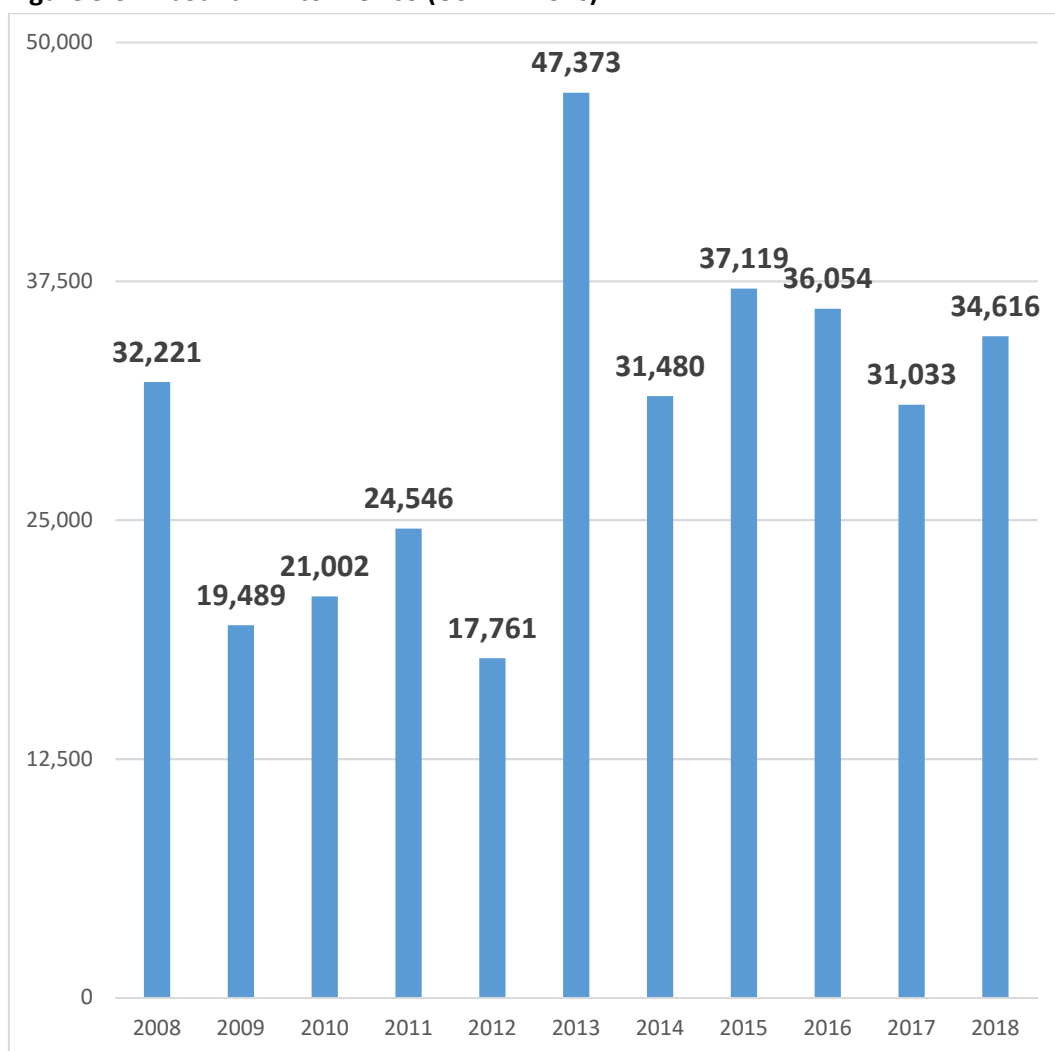
Source: Adapted from Mexico GDP Annual Growth Rate (<https://tradingeconomics.com/mexico/gdp-growth-annual>), accessed by August 2019.

B. Inbound foreign direct investment (FDI)

Mexico is the world's 14th largest FDI recipient (Desjardin, 2019), as well as the top destination of greenfield investment in Latin America (The FDI Report, 2019), the second destination of FDI overall (World Investment Report, 2018). Among emerging countries, it is the most open to FDI. However, FDI has been relatively stagnant in Mexico for several reasons: a rise in violence (Criminal Violence in Mexico, n.d.), the need for important adjustments in the energy sector (Mexico's New Energy Reform, n.d.), and the need for improved tax regulation (Mexico Releases Draft Miscellaneous, n.d.). Additionally, Mexico is not an easy market to do business with: the country is ranked 54th out of 190 in the World Bank's 2019 Doing Business ranking (Doing Business, 2019). Moreover, the country is not as innovative as it could be, given that Mexico is ranked 56th worldwide and 3rd in Latin America (Dutta, Lanvin, and Wunsch-Vincent, 2019).

Mexico is the second most important destination for foreign direct investment in Latin America. The U.S.' stock of direct investment to Mexico was \$109.7 billion in 2017 and is mostly concentrated in manufacturing, non-bank holding companies, finance and insurance (Mexico, n.d.). In 2018, the country received \$34.6 billion in FDI (Mexico Foreign Direct Investment, n.d.), mostly concentrated in Mexican states bordering the U.S., where many assembly factories are located. Sectors that receive most of the investment include banking, automotive, electronics, and energy. Figure 5.3 presents Mexico's FDI inflows from 2008 to 2018.

Figure 5.3. Inbound FDI to Mexico (USD millions)



Source: Adapted from Mexico Foreign Direct Investment (https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD), accessed August 2019.

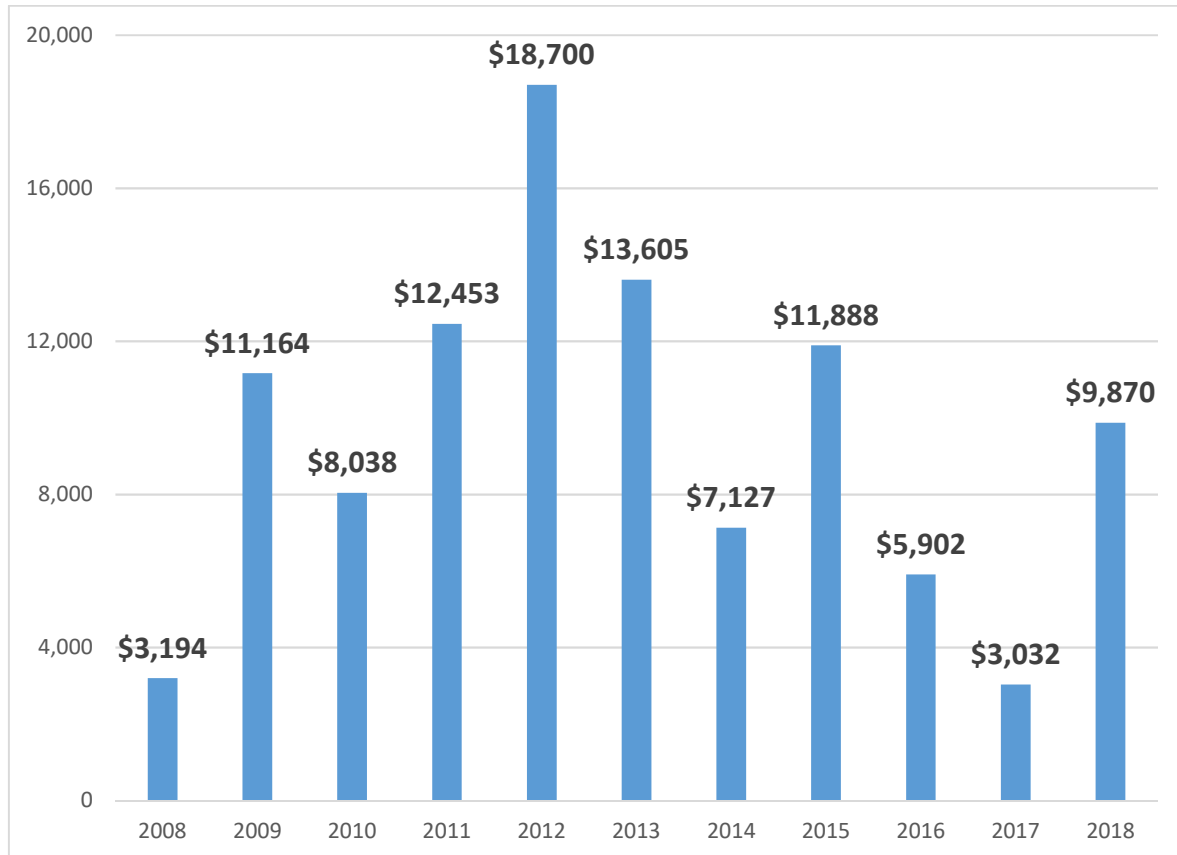
C. Foreign Direct Investment Regulatory Restrictiveness Investment (FDI RRI)

The Organization for the Economic Cooperation and Development (OECD) developed the Foreign Direct Investment Regulatory Restrictiveness Index (FDI RRI) to measure restrictions on foreign direct investment. This is a composite index that takes values between 0 and 1, with 1 being the most restrictive. According to the OECD, Mexico's FDI RRI is 0.19 (Foreign Direct Investment Regulatory Restrictiveness Index, n.d.). Although Mexico's RRI seems low, it is high compared to the average RRI of OECD countries, (0.07) and is significantly higher than Brazil's FDI RRI, which is .09. To evaluate restrictions in direct investment, FDI RRI takes into consideration four types of statutory restrictions on FDI: (i) foreign equity restrictions, (ii) screening and prior approval requirements, (iii) rules for key personnel, and (iv) other restrictions on the operation of foreign enterprises. Mexico's individual RRI components are .06, .1, .0, and .01 respectively.

D. Outbound Foreign Direct Investment (OFDI)

Mexico's outward FDI total fluctuated substantially in recent years, though it increased from 2008-2018. Large Mexican companies actively maintain investment programs outside the country, whether through the purchase of assets via established companies or through the installation of new plants. Additionally, in the last 17 years, Mexico's direct investment outflows reached \$131.28 billion, equivalent to only 28% of FDI captured in Mexico in the same period (Bullman, 2018). Consequently, Mexico has been a net receiver of investment over the years.

Figure 5.4. Outbound FDI in Mexico from 2008-2018, (USD millions)



Source: Adapted from Mexico Foreign Direct Investment (<https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD>), accessed August 2019.

The severe fluctuations in Mexico's outbound FDI occur correlate with a combination of negative external conditions, such as political uncertainty in the region (in view of the presidential elections in major Latin American economies like Brazil, Mexico and Colombia). Mexico's dependence on only a few projects from a small number of large Mexican multinationals exacerbates this problem. For example, in 2018, Southern Copper, a mining company and a subsidiary of Mexico-based Grupo Mexico, invested \$2.5 billion to develop the Michiquillay project in Cajamarca, Peru. Construction will begin in 2019 and the site is expected to be operational by 2022 (The FDI Report, 2019). This single investment represents approximately 40% of Mexico's total OFDI in 2018.

5.2. Role of the Mexican government

Although Mexico has relative economic and political stability in comparison with other countries in Latin America, and attracts FDI through the OECD, G20 and the Pacific Alliance, the country also experiences negative conditions that have the potential to effect FDI.

First, the landslide win of Andrés Manuel López Obrador (AMLO) on December 1, 2018 marked a historic change in the Mexican government. Some of AMLO's policy proposals, such as the referendum on past energy reforms that ended Pemex's 75 years state-owned control of the oil company and the cancellation of the Mexico City New International Airport project, led to a rise of sovereign risk, providing a source of investment uncertainty (World Economic Outlook, 2019). Second, the level of corruption is high. According to Transparency International, an advocacy group, Mexico's position in the global ranking of corruption is 130 out of 180 countries. (Transparency International, 2019). Third, drug gang violence is on the rise in many cities, especially in U.S.-border areas. Fourth, opportunities are limited foreign investors, as some sectors are reserved for the Mexican State or Mexican citizens. Fifth, the economy is vulnerable to fluctuations in oil prices. Finally, transportation infrastructure is ineffective, and the educational system is deficient. The Mexican government could have played a more effective role in supporting incoming direct investment (inbound FDI) and the internationalization of Mexican multinationals (OFDI). For instance, ProMexico, an agency of the federal government to promote both attracting FDI into the country and investment abroad by Mexican companies, closed all its foreign offices and their responsibilities were transferred to embassies and consulates.

A. Impact of USMCA versus NAFTA

Mexico also faces a challenging external environment due to the USMCA trade deal. Announced on Oct 1, 2018. USMCA is the new trade deal among the U.S, Mexico, and Canada, which replaces the former NAFTA (North American Free Trade Agreement). USMCA negotiations began as a result of U.S. President Donald Trump's efforts to replace NAFTA based on the argument that NAFTA was unfair to the U.S.

The U.S.-Mexico-Canada trade deal differentiates itself from NAFTA in several key characteristics. The first is the requirement that 75% of auto components be built in North America in order for a car to be imported duty-free, up from 62.5%, a decision crafted mainly to hurt China's exports to the U.S. Second, 40 to 45% of auto components will have to be made by laborers making at least \$16 an hour, a measure that will not only discourage firms from shifting jobs to lower-wage Mexico but also likely transfer some Mexican-based production to the U.S. (Petras, 2018). As a consequence, USMCA will keep global automakers from building cars cheaply in Mexico and is aimed to bring more jobs into the U.S., which will impact Mexico's economy. Moreover, the U.S.' tariffs of 25% on steel and 10% on aluminum from Mexico remain in effect. Finally, stricter intellectual property rules will enable law enforcement personnel to stop suspected pirated goods in the U.S. and in Mexico.

The aggregate effects of the USMCA are relatively small, according to the International Monetary Fund (IMF). Key provisions in the USMCA would lead to diminished economic integration

in North America, reducing trade among the three North American partners by more than \$4 billion (0.4%) while having negligible effects on real GDP growth for the U.S., Mexico, and Canada. On the positive side, most of the benefits of USMCA would come from trade facilitation measures that modernize and integrate customs procedures, reducing trade costs and border inefficiencies. Finally, changes in trade flows due to the USMCA would also lead to structural changes in the composition of production across North America. In each country, some sectors should benefit from greater trade integration while others experience declines in output and job losses, leading to changes in the global value chains and prompting employees to move from contracting to expanding sectors. In the aggregate, real wages for skilled and unskilled workers in Mexico may decline slightly due to the new provisions of USMCA, but wages may be unaffected in Canada and the U.S. (Burfisher, Lambert, & Matheson, 2019).

The USMCA is expected to come into effect following the completion of Trade Promotion Authority (TPA) procedures, including a congressional vote. While some specialists believe that the new trade deal with Canada and Mexico leaves much of the old NAFTA intact (Schoen, 2018), USMCA may slow some of Mexico's manufacturing growth in the future. Some analysts further predict that the new accord would restrict trade and investment, imposing costs on consumers and undercutting U.S. economic growth (Schott, 2019). Beyond these direct impacts, higher trade policy uncertainty and concerns of escalation and retaliation may reduce business investment, disrupt supply chains, and slow productivity growth. In Mexico, the resulting depressed outlook for corporate profitability could dent financial market sentiment and further dampen growth (World Economic Outlook, 2019).

B. The U.S.-China trade war and the impacts on the Mexican economy

As the bilateral trade war between the U.S. and China continues, a growing number of countries are experiencing ripple effects of the economic clash between the world's largest economies. Despite President Trump's hostile rhetoric against Mexico, the U.S. and Chinese losses are Mexico's gains in several respects. With the increase in tariffs on Chinese imports, North American companies may move manufacturing activities from China to Mexico, due to its integration with U.S. supply chains. In fact, Mexico already replaced China as the top U.S. trading partner (Kopf, 2019). Moreover, the U.S.-China trade war may result in increased FDI in Mexico since Chinese manufacturers may invest in Mexican-based firms or open Mexican subsidiaries to take full advantage of (i) export legislation to the U.S., (ii) competitive wage prices of Mexico, and (iii) lower shipping costs due to the Mexican proximity to the U.S.

5.3. Mexican multinationals (MultiMex)

Table 5.1 presents the Mexican companies that are in the Forbes 2000 and/or in the Fortune Global 500 rankings, as well as their sectors, sales, profits, total assets, and market value.

Table 5.1. Mexican companies ranked by Forbes

Forbes Global 2000	Fortune Global 500	Company	Sector	Sales (U.S.\$bn)	Profits (U.S.\$bn)	Assets (U.S.\$bn)	Market Value (U.S.\$bn)
-	95	PEMEX	O&G	87.4	-9.4	105.3	N/A
189	196	América Móvil	Telecommunications	53.1	2.5	72.6	52.4
-	443	CFE	Utilities	28.5	2.3	84.2	N/A
429	488	FEMSA	Beverages	25.1	1.3	29.3	34.5
473		Banorte	Banking	10.4	1.7	82.7	18.8
594		Grupo Mexico	Metals & Mining	10.5	1.3	26.9	24.3
975		CEMEX	Construction Materials	14.4	.5	28.1	7.4
1030		ALFA	Banking	19	.7	18.8	5.5
1118		Grupo Inbursa	Banking	4.1	.9	25.9	10.2
1230		Elektra	Retail	5.4	.8	14.1	12.7
1306		BIMBO	Food Processing	15	.3	13.4	10.1
1419		ARCA	Beverages	8.3	.5	12.1	10
		Continental					
1508		El Puerto de Liverpool	Retail	7	.6	8.9	8.5
1860		Fibra Uno	Reak Estate	1	.9	12.3	5.8
1964		Grupo Carso	Conglomerate	5	.5	7	8.9

Source: Fortune Global 500 (2018), Forbes Global 2000 (2018).

As shown above, leading Mexican firms compete in industries ranging from telecommunications, beverages, banking, metals and mining to construction materials, food processing, and retail. Yet the high-technology segment is under-represented, with only four Mexican tech companies in the Fortune Global 500. The only non-state-owned enterprises include: América Móvil, a concession-based company, and CEMEX, a family-controlled, listed company.

A. Five selected Mexican multinationals

This section analyzes the following five Mexican multinationals:

1. America Móvil and FEMSA, which are the two largest Mexican multinationals according to the Forbes Global 2000 list of multinational enterprises;
2. CEMEX, which has expanded aggressively through acquisitions and integration of less-performing competitors;
3. Elektra, which features an integrated business model of retail and financing;
4. Bimbo, which has internationalized while diversifying both products and markets, through greenfield, acquisitions, and joint-ventures.

PEMEX and CFE, while relevant to the Mexican economy due to their ownership structure (totally state-owned), either do not have an international presence (CFE) or a very diminished limited international presence relative to its size (PEMEX), and therefore are not examined in this section. Table 5.2 presents ownership structures and international relevance parameters for the selected firms.

Table 5.2. Selected multinationals

Mexican Multinational	Position in Forbes 2000	Ownership	Relevance
América Móvil	189	A public company, controlled by Carso Group, one of Carlos Slim's holdings	The fourth-largest mobile operator in the world, a leading provider of integrated telecommunications services in Latin America
FEMSA	429	A public company largely owned and controlled by Mexican families	Largest independent Coca-Cola bottler in the world, the second-largest shareholder of Heineken International
CEMEX	975	A public company largely owned and controlled by Mexican families	Fifth-largest cement producer in the world
Elektra	1230	Private company part of a large conglomerate, Grupo Salinas	Elektra is a retail and financing company targeting middle and base-of-the-socioeconomic-pyramid consumer segments. Its retail business sells household appliances, clothing, and electronics while its financial division offers consumer and personal loans and credit cards.
Grupo Bimbo	1306	A public company controlled by four Mexican families	The largest baking company in the world

Source: Authors.

América Móvil

América Móvil, the Mexican mobile phone company, spun-off from former state-owned monopoly, Teléfonos de México in 2000, and is one of the textbook examples of privatization cases in Latin America. The company is one of the most important carriers within the telecommunications industry worldwide. Currently, the organization has operations in 23 countries including 17 spanning the Americas and six in Europe. In December 2018, the company had 359 million access lines, including 276 million wireless and 84.1 million subscribers. América Móvil's products and services generated operating revenues of \$52.7 billion and an operating income of \$7.1 billion that same year (América Móvil, 2019). In Latin America, América Móvil operates under the brands Telmex, Telcel and Claro; in the U.S. the company operates as Tracfone, while in Central and Eastern Europe under the A1 (formerly Telekom Austria) brand.

One of América Móvil's strength is product innovation, as exemplified by its introduction of the pre-paid model (Casanova & Rullán, 2008) that appeals to low-income consumers, the launch of 3G services in Mexico's largest cities, and the earliest offer of 4G services in Mexico. Other strategies that drove high sales volumes included aggressive marketing and mobile handsets giveaways (Casanova, 2009). By the early 2000s, after gaining dominance over the Mexican mobile

telecommunications market with 70% of mobile phones network and 80% of landlines, América Móvil's only growth opportunities were in other markets.

The company swiftly expanded its operations in Latin America and in the U.S. by exploiting communications development opportunities, first with partners and subsequently through a wave of acquisitions from other players in the industry, such as Bellsouth, Verizon, AT&T, MCI, TIM, and France Telecom (Cuervo-Cazurra, & Montoya, 2018). In 2014, América Móvil took control of Telekom Austria as a platform for future acquisitions in Central and Eastern Europe. Thus, América Móvil's preferred choice of entry in foreign markets was through partnerships with local partners, followed by M&A later in the internationalization process.

Beyond the Americas, the company's global presence is modest, both in numbers of subscriptions as well as in its rate of expansion (América Móvil, 2019). One plausible explanation may be the perceived distance between Mexico, Latin countries and non-Latin countries. The cultural, administrative, geographic and economic distances between Mexico, Europe, and Africa, make the latter two non-natural markets for a Mexican telecommunication company (Casanova & Rullán, 2008), and may be responsible for America Móvil's slow expansion into those regions. Another contributing factor might be local competitors' strength in the European markets, where state-owned firms have historically had a relevant role in the telecommunications sector. As a consequence, América Móvil's international growth has decelerated in the last five years.

In conclusion, América Móvil's international expansion can be explained by its opportunistic approach of taking advantages of the business opportunities presented in emerging markets. Given the telecommunications business' high intensity of capital requirements, América Móvil benefited from high entry-barriers. In the near future, América Móvil will likely continue to explore acquisitions opportunities in Latin America, in particular in Panama, Bolivia and in the Caribbean, and further non-natural markets if business opportunities arise (Cuervo-Cazurra, & Montoya, 2018).

FEMSA

Fomento Económico Mexicano, S.A.B. de C.V., (FEMSA) is a Mexican multinational company with several business divisions, including Coca-Cola FEMSA, the largest public bottler of Coca-Cola products in the world, and FEMSA Comercio, comprising a Proximity Division operating the OXXO chain of small-format stores, a Health Division, which includes drugstores and related operations, and a Fuel Division, which operates the OXXO GAS chain of retail service stations. FEMSA is also the second-largest stockholder of Heineken, a leading global brewing company with products sold in more than 70 countries.

Based in Monterrey, FEMSA has bottling operations in 12 countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Guatemala, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela), and served more than 300 million consumers in 2018 while earning more than \$23.9 billion in total revenues. FEMSA's beverage business is considered an anchor bottler of Coca-Cola worldwide, responsible for 13% of the global volume of beverages sold by the Coca-Cola system (FEMSA, 2018).

The Mexican peso crisis in 1994, the “Tequila Crisis,” ignited the international expansion of FEMSA’s beverage business. To mitigate country risks, FEMSA acquired smaller and less efficient bottlers with solid support from the Coca-Cola headquarters in the U.S. In addition to regional expansion in the soft drinks business, FEMSA also expanded its product portfolio, acquiring brands in segments such as juices, sports drinks, energy drinks, dairy products, plant-based, sparkling, and still water.¹⁴ Currently, FEMSA does not show signs of growth outside Latin America, as it prioritizes regional consolidation, building scale in mature mid-technology industries, such as cement, steel, aluminum, auto parts, personal computers, and beverages (Ramamurti, 2009).

FEMSA’s expansion exemplifies the Uppsala model, which predicts that firms are better off entering foreign markets based on psychic distance (country and market-specific characteristics) between the home and host countries. FEMSA’s investment decisions in the U.S. also fit the Uppsala model due to the mutual influence between Mexico and the Southern U.S.. FEMSA’s international growth has taken two forms: (i) inorganic growth through mergers and acquisitions, in order to reach economies of scale and transplant best practices in marketing, logistics, and supply chain, and (ii) joint ventures, to speed up the acquisition of the knowledge of market-specific characteristics.

CEMEX

The cement industry has high transportation costs relative to production, low labor intensity, high capital requirements, and high energy-intensity. It therefore presents high barriers to entry and exit. It is estimated that 90% of world cement demand is covered by local manufacturers (Cazurra and Montoya, 2018). After decades of protective policies, the 1982 economic crisis prompted the Mexican government to liberalize the economy to attract FDI. CEMEX faced competition from foreign rivals and started to consolidate its domestic position through the acquisition and integration of local manufacturers within Mexico. After becoming Mexico’s largest producer of cement, reaching more than 60% of the local market, the company started its international expansion, which occurred mostly through acquisitions, as presented in Table 5.3.

Table 5.3. Timeline of CEMEX's expansion

Year	Target Country	Mode of Entry	Target or Partner
1969, 1976, 1987	Mexico	Acquisition	Cementos Maya, Cementos Guadalajara, Cementos Chihuahua
1986, 1987	USA	Joint Venture	Southdown, Heidelberg, Aalborg, Lehigh
1987, 1989	Mexico	Acquisition	Cementos Anáhuac, Cementos Tolteca
1989, 1992, 1994	USA	Acquisition	Gulf Coast Portland Cement, Houston Shell and Concrete, Houston Concrete Products, Aggregate Transportation, Pharris Sand & Gravel, Balcones Cement plant
1992	Spain	Acquisition	Valenciana, La Auxiliar de la Construcción
1993, 1994, 1994	Bahamas, Venezuela, Panama	Acquisition	Concem, Vencemos, Cemento Bayano
1994	Trinidad,	20% Stake	Trinidad Cement,
1995	Dominican Republic	Acquisition	Cementos Nacionales
1996	Colombia	Acquisition	Cementos Diamante, Samper
1997, 1999	Philippines	30% Stake, Acquisition	Rizal Cement, APO Cement
1998, 1999	Indonesia	14% Stake, 12% Stake	Semen Gresik
1999	Costa Rica	Acquisition	Cemento del Pacífico
1999, 2000	Egypt	77% Stake, 13% Stake	Assiut Cement
1999	Chile	12% Stake	Cementos Bio-Bio
1999	Haiti	Acquisition	Cement Terminals
2000	USA	Acquisition	Southdown
2001	Nicaragua	Lease	Nicaraguan Government
2001	Thailand	Acquisition	Saraburi Cement

2001	Bangladesh	Greenfield	Griding Mill
2001	France	Acquisition	Pastorelo Travaux Routiers
2001	Japan	Acquisition	Wangan
2002	Puerto Rico	Acquisition	Puerto Rican Cement Company
2003	USA	Acquisition	Dixon-Marquette Cement
2005	UK	Acquisition	RMC
2006	Spain	Brownfield	
2006	Indonesia	Divestment	Operations in Indonesia
2007	Australia	Acquisition	Rinker
2013	Germany	Divestment	Asset swap with Holcim
2013	Czech Republic	Divestment	Asset swap with Holcim
2015	Austria and Hungary	Divestment	Sale to Rohrdofer Group
2016	USA	Divestment	Pacific Northwest

Sources: Authors, based on Casanova & Hoeber (2008); Ghemawat, (2004 and 2006) Moffet, (2017).

As a result, CEMEX became a global building materials company providing products and services in more than 50 countries. CEMEX cherry-picked structurally attractive markets to mitigate risk through risk-pooling while pursuing vertical integration of assets in the production of cement, aggregates, and ready-mix concrete.

Operationally, CEMEX is known for its extensive due diligence process in selecting M&A targets, a fast merger/post-merger integration process, and the use of information systems and product delivery tools to maintain a competitive cost structure and leverage organizational knowledge (Cazurra and Montoya, 2018). Consequently, its subsidiaries focus on making and selling cement while the parent company develops the corporate strategy.

Despite its expertise in the acquisition and integration of target companies, CEMEX was severely hit by two events: the acquisition of Rinker (which was financed with \$14.2 billion of new debt on top of Rinker's \$1.3 billion existing debt) and the 2008 housing crisis in the U.S., which led to the Global Financial Crisis (GFC) in 2008-2009. The timing of the acquisition proved unfortunate as the construction sector halted investment and demand for cement decreased worldwide. Both the Rinker acquisition and the GFC damaged CEMEX's credit profile, prompting it to divest assets in Germany, Austria, Hungary, the Czech Republic and in the U.S. to appease creditors (Moffet, 2017). CEMEX's approach like FEMSA's, also displays both inorganic growth and joint ventures.

Elektra

Grupo Elektra is the leading retailer and financial services company in Latin America, the second-largest bank in Mexico (by number of branches) and the largest non-bank provider of cash advance services in the U.S. The company operates 7,269 points of contact (stores and financial services units) in North, Central, and South Americas. It has used its Mexican business model of blending retail and financial services to expand internationally into countries and regions with similar economic characteristics in the Americas (Elektra, 2019).

Elektra's specific advantages are: (i) its blend of retail and financial services, which deepens its reach to low-income customers without access to traditional banking systems, (ii) its credit evaluation capabilities, (iii) its marketing capabilities to customers in middle and low segments, (iv) its merchandise mix, which includes appliances, clothing, and electronics, and (v) its expertise in retail logistics. This model enables consumers at the bottom of the socio-economic pyramid to access the credit they need to purchase products. Elektra's standardized practices in each of its markets suggest that the company strategically searches for efficiency and services tailored to the needs of middle and lower-middle segments. It has also followed the Uppsala model of international expansions to incrementally expand into other markets with low psychological distance.

Elektra's international expansion began in 1996 after a foreign competitor (the Dutch-owned chain Le Curacao) decided to enter the Mexican market. Feeling threatened at home, the Elektra decided to strike back abroad in 1997 and opened stores in Guatemala, Honduras, and other Central American countries. Elektra adopted organic growth through greenfield investment as its entry mode of choice in foreign countries, even though economies of scale can present significant barriers in retail.

Grupo Bimbo

Grupo Bimbo is a Mexican multinational in the food processing sector. The company is ranked 1,306 in the Forbes 2000 and is the largest baking company in the world, with operations in 32 countries. Bimbo's profits reached \$310 million from revenues of \$15 billion as of May 15th, 2019 (Fortune Global 2000, 2019).

Bimbo's international expansion began in the 1980s with its entry into the U.S. market, mainly to market its products to Hispanic immigrants. Since that time, most of its internationalization has occurred through acquisitions. Bimbo's strengths lie in its excellence in production, branding, distribution, innovation and packaging, key drivers of success in the consumer goods industry. As of today, Grupo Bimbo's worldwide presence includes plants in the U.S. (83), Mexico (38), Latin America (33), Europe (24), Asia (14), and Africa (5) (BIMBO, n.d). Table 5.4 presents the international expansion of Grupo Bimbo, with its acquisition targets.

Table 5.4. Bimbo's acquisitions and international expansion

Year	Target	Market
1964	Acquires the right to use Sunbeam brand	Mexico
1984	Exports to the U.S.	U.S.
1989	Construction of a plant in Central America	Guatemala
1991	Starts operations in Latin America	Argentina
1998	Mrs. Bairds	U.S.
2001	Plus Vita and Pullman	Brazil
2002	The baking business of George Weston Limited	U.S.
2006	Panrico, a baking company in Beijing	China
2008	Nutrella	Brazil
2009	George Weston Foods	U.S.
2011	Sara Lee North American Fresh Bakery	U.S.
2011	Fargo	Argentina
2011	Bimbo Iberia	Spain and Portugal
2014	Canada Bread	Canada and the UK
2014	Supan	Ecuador
2015	Saputo Bakery	Canada
2016	General Mills	Argentina
2016	Panrico	Spain and Portugal
2017	Ready Roti	India
2017	Grupo Adghal	Morocco
2017	Agreement to acquire East Balt	U.S., Morocco, France, Switzerland, Italy, Turkey, Ukraine, Russia, China, South Korea, South Africa

Source: Authors, data from the company website.

Initially, Grupo Bimbo's growth strategy in Mexico was focused on product diversification; however, Bimbo's internationalization strategy followed a combination of greenfield opening of

manufacturing and commercial facilities, acquisitions, and alliances pursuing diversification in international markets. The company's continued growth supports Bimbo's leadership position globally; since 2017 the company has gone beyond its natural market of the American continent and the Iberian Peninsula to expand into other regions in the world.

5.4. Lessons from the international expansion of Mexican multinationals

The five Mexican multinationals discussed in this chapter demonstrate eight characteristics of note:

1. They are serious contenders in their sectors and, in the case of CEMEX and FEMSA, global leaders in their segments.
2. Their expansions tend towards the Latin American region, mostly due to similarities between Mexico and the host countries. Elektra is a prime example, since the firm targets many underdeveloped countries in Central America.
3. With the exception of CEMEX, Mexican global companies are still in the early stages of internationalization, suggesting they have a long road ahead to become fully internationalized companies.
4. Particularly in the cases of Bimbo and FEMSA, international expansion (i.e. market development) takes place in conjunction with product development (i.e., new product introduction that leads to a new product mix) since both companies introduce new products and target new markets simultaneously.
5. Dual acquisition-integration is at times used as an entry mode of some MultiMex, like CEMEX, FEMSA, and América Móvil, as these firms are in markets defined by economies of scale and even economies of scope.
6. All of the multinationals studied in the chapter demonstrate a strong survival instinct due to the turbulent environment in their home market.
7. Finally, Bimbo and Elektra demonstrate distinctive uncommoditizing strategies (Cuervo-Cazurra et al, 2018). Bimbo has differentiated its products through managerial processes (developing strong new product leveraging cross-border capabilities), while Elektra has avoided the commodity trap through the addition of services to its product mix.

Although some of the international ventures of the five multinationals presented in this chapter were not successful, such as Elektra's entry into the Dominican Republic and Brazil, America Móvil's movement into Europe, and CEMEX's acquisition of Rinker in Australia, the five MultiMex exemplify the internationalization of multinational companies from an emerging market. Even as Mexican multinationals face more daunting challenges relative to their advanced economy counterparts, these five MultiMex prove that global dominance is not limited to multinationals from rich countries.

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Chapter 6

Social Innovation in Latin America

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- 6.1. Context
- 6.2. Social innovation
- 6.3. Countries and cases
 - A. Natura — Brazil
 - B. CEMEX — Mexico
 - C. Bancolombia — Colombia
 - D. Pacari — Ecuador
 - E. Intercorp — Peru
- 6.4. Conclusions

Executive Summary

Latin American countries, like many other emerging economies, face serious challenges. Climate change, as well as persistent inequality and violence force millions of people and businesses throughout the region to live in a constant state of uncertainty. Consequently, private firms from the region have taken the initiative to experiment with business models that create value beyond the economic dimension, producing a positive social and environmental impact. In this chapter, we provide an overview of the concept of social innovation, highlight its increasing relevance for businesses in Latin America and we provide an overview of five significant regional case studies.

6.1. Context

Latin America is rich in culture, biodiversity, natural and energy resources but it is also characterized by high rates of inequality and violence. As a result, citizens and the business community are becoming increasingly aware of the need to redefine business and business success to include the well-being of people, societies, and nature in the present and in the future.

Globally, more and more longstanding businesses and new entrepreneurial ventures have committed to the concept of a regenerative economy that seeks to recover and restore value for both degraded ecosystems and society. B Corporations are on the rise—the number of certified companies

grew from 82 certifications in 2007 to 2,933 as of July 2019 worldwide (B Corporation, n.d.-a). Certified B Corporations are for-profit businesses that meet the highest standards of verified social and environmental performance and public transparency. To obtain the certification, Certified B Corporations must commit to having a positive impact on nature and society in their bylaws, therefore assuming a legally binding duty to accountability and to balance profit and purpose (B Corporation, n.d.-b).

Latin American companies began joining the B Corp movement in 2012. As of July 2019, there are 540 certified firms in the region, some 20% of all Certified B Corporations in the world. In addition, around 4,000 companies in the region use B Impact Assessment tools to manage their social and environmental impacts, indicating that Latin American companies are showing a growing interest in these values and causes.

In 2018, by the Dow Jones Sustainability Index added the Mercado Integrado Latinoamericano (MILA) Pacific Alliance Index, with 41 companies.¹⁸ There are 14 companies from Latin America in the Dow Jones Sustainability World Index, including one new addition in 2018 (S&P Dow Jones Indices; RobecoSAM, 2018b). Moreover, 26 of the 94 companies in the Dow Jones Sustainability Emerging Markets Index are from Latin America (S&P Dow Jones Indices; RobecoSAM, 2018a). Of the 61 industries in the 2018 Industry Leaders classification, two are from Latin America (RobecoSAM, 2018). Finally, in the FTSE4Good Index for emerging economies, 98 of 541 companies are from the region (FTSE Russell, 2019).

In Latin America, social innovation initiatives have risen as a response to acute and diverse social problems rampant in the region. For example, between 2004 and 2010 the Social Development Division of the Economic Commission for Latin America and the Caribbean (ECLAC), with the support of W.K. Kellogg Foundation, developed a program to promote 4,800 social innovation initiatives related to community health, basic education, youth, food security and nutrition, income generation, rural development, social responsibility and volunteering (ECLAC, n.d.). All these domains represent huge areas for advancement in the region and require substantial efforts. Since then, many more actors are involved in social innovation initiatives, including the private sector. Businesses have become more aware of opportunities to overcome the aforementioned challenges, and as a result, multilatinas, multinational companies from Latin America, are among the global leaders in social innovation and sustainable practices.

6.2. Social Innovation

In a recent statement about the purpose of the corporation, the Business Roundtable, an organization that represents the chief executives of 192 large U.S. companies, declared that business leaders should commit to balancing the needs of shareholders with customers, employees, suppliers and local communities (The Washington Post, 2019). The need to reinvent 21st century capitalism resonates well with the notion of social innovation. Peter Drucker and Michael Young¹⁹ first articulated the concept of social innovation in the 1960s, and the approach has since gained relevance at par with the rising

¹⁸ This index does not include Brazil.

¹⁹ Abreu Quintero, José Luis (2011) *Innovación social: Conceptos y etapas*. Daena: International journal of good conscience, 6 (2). pp. 134-138. ISSN 1870-557X

awareness of problems related to poverty and inequality, access to good quality healthcare and education, pollution, and biodiversity conservation.

Even though many analysts share a common understanding of social innovation, there is no single and widely accepted definition. In general, social innovation relates to actions that solve social problems. However, there is no consensus about what actions trigger social innovation, how social impact is created and measured, or which actors are called upon to create social innovation.

For example, some authors argue that civil society, with the support of other organizations and the government, are actors that support social innovation.²⁰ Others claim that it is not only civil society, but any actor whose primary purpose is social.²¹ In the same way, the International Handbook of Social Innovation (2013) restricts social innovation to projects and international networks. However, we see these views as unnecessarily restrictive. We subscribe to the understanding that social innovation can be fostered by any actor—civil society, private sector, government, or any kind of organization.²²

Relatedly, the object of social innovation is almost always understood in broad terms. In other words, the innovation could be in terms of products, services, instruments, models, and processes, among others, even though some authors focus more on activities, social relations, and services.²³

There is complete agreement about the fact that social innovation has a positive impact on society, whether in terms of poverty, social inclusion, equality, human rights, environment or any other way that improves the wellbeing of a group of people. However, there is debate around the question of whether social benefit should be the root and the reason for a particular innovation, or whether it could also be a consequence while serving to other purposes.²⁴

In this chapter, we adopt the more general approach to social innovation, understanding it as any new way of doing things that contributes to solving social and environmental problems. Therefore, we define social innovation as new products, services, models, processes, or new ways of using already existing ideas by companies, organizations, civil society, government or any other actor, that tackles social or environmental issues and enhances community agency, whether as the main motivation and core value of the initiative or as a consequence in the pursuit of other goals.

Despite the fact that the vast majority of authors focus on initiatives from NGOs or civil society and, in some cases, from social entrepreneurs, we emphasize that the private sector, including big multinational corporations, can play a key role in the development of social innovation, especially in a region that has so many pressing social issues such as Latin America. Since large companies have the capacity and scope to solve social issues, while they continue to fulfil the other stakeholders' expectations—by expanding to new markets or launching new products or services—the social and environmental impact holds promise to transform and improve the company's relations with customers and communities. Companies can achieve this as part of their core business, by aligning business strategy

²⁰ Cecchini & Bernal, 2018; Latin American Social Innovation Network, 2018; Rodríguez Herrera, Adolfo - Alvarado, 2008.

²¹ Mulgan, Tucker, Ali, & Sanders, 2007.

²² Dawson & Daniel, 2010; Kanter, 1999; Martínez, O'Sullivan, Smith, & Esposito, 2017; Mcelroy, 2002.

²³ Franz, Hochgerner, & Howaldt, 2012; Moulaert, MacCallum, Mehmood, & Hamdouch, 2013; Mulgan et al., 2007.

²⁴ Martínez et al., 2017.

to specific social and environmental goals. During the process, they can arguably become more resilient and perform better in the long term. To testify to this possibility, we present the experience of five multinational companies from Brazil, Chile, Colombia, Ecuador and México that are changing their business models in response to the social context of their countries, and, consequently, engage in social innovation in the communities in which they operate.

6.3. Countries and Cases

A. Natura Brazil

Natura is the largest Brazilian multinational by revenue in the cosmetic industry. Founded in 1969, Natura now comprises Natura Cosmetics, Aesop, acquired in 2012, and The Body Shop, acquired in 2017. Moreover, it was the first publicly listed company to become a B Corp, and the biggest certified B Corp in the world (Natura&Co, 2018a). By 2018, it employed more than 18,000 people, reported \$3,460.7 million in revenues and \$141.7 million in net income, with operations in 73 countries on five continents (Natura, 2018).

The mission of Natura Cosmetics is to contribute to a better world “through commitment to transparency, sustainability, and well-being” (Natura, n.d.). Its value proposition focuses on a sustainable practice related to the use of natural ingredients from the Amazon rainforest, local communities and their ecosystems. Natura has developed multiple programs to fulfill these objectives. It is certified by the Union for Ethical BioTrade for sustainable supply chains for all-natural ingredients, including the maintenance of ecosystems, fair trade and benefit sharing (Natura&Co, 2018a; Natura, 2018). One example is its sustainable packaging policy: Natura utilizes 100% post-consumption recycled raw material for packaging its product line Ekos (Natura&Co, 2018b). The firm sells non-cosmetic products (backpacks, mugs, notepads, among others) through its “Creer Para Ver” program, to fund initiatives that promote education. In 2018, sales through this program reached more than \$10 million in Latin America, exceeding their goal for 2020. All their products have the Leaping Bunny seal, which guarantees that the brand does not test on animals in any stage of the production chain (Natura&Co, 2018a).

The core initiative of the Natura Amazônia Program has been to create sustainable supply chains in the Amazon, since 18% of its raw materials come from this region. On the one hand, it builds strong relations with ancestral Amazon communities in order to learn from their traditional use of biodiversity, and develop sustainable production, agriculture and agroforestry systems. On the other hand, the company guarantees fair trade practices and supports projects that contribute to the communities’ social progress. The company also invests 2.2% of net revenues in research and development, including investment in the Natural Innovation Center in Manaus, Amazon, dedicated to developing sustainable natural products and protect and regenerate Amazon biodiversity. As a result, as of 2018, the program has contributed to the preservation of 257,000 hectares of forestland, to the immediate benefit of 4,636 families, and represents an investment of \$3.5 million in local communities (Natura, 2018).

In essence, Natura efforts were able to integrate innovative solutions and models that fulfill its value proposition and economic objectives, but at the same time tackle social and environmental problems. In this way, Natura’s business model embraces the concept of social innovation in a significant way.

B. CEMEX - Mexico

CEMEX is a Mexican multinational dedicated to building materials and complementary products. It operates in more than 50 countries in the Americas, Europe, the Caribbean, Asia, the Middle East and Africa. It was founded in 1906 and it is publicly listed on the New York Stock Exchange and the Mexican Stock Exchange. The company's mission is "to create sustainable value by providing industry-leading products and solutions to satisfy the construction needs of customers around the world" (CEMEX, 2018). Since 2015, the firm has committed to aligning its strategy with the United Nations Sustainable Development Goals (SDGs), while still generating value for its shareholders. In 2018, it reported \$14,089 million in revenue, an EBITDA of \$2,453.8 million and a net profit of \$532.7 million.²⁵ As of 2018, CEMEX had more than \$28,122.8 million in assets and employed more than 42,000 people.²⁶

In order to implement the SDGs, the company prioritized five objectives based on CEMEX's core activities: decent work and economic growth, industry innovation and infrastructure, sustainable cities and communities, climate action, and environmental conservation. CEMEX changed its production process to save water and other resources, it became more energy efficient and increased the use of alternative fuels and raw materials, using clinker substitutes, among other alternatives (CEMEX, 2018). In 2018, 43% of its cement and ready-mix concrete had sustainable attributes. The company aims to have more than 50% sustainable products by 2030.

Since 2010, CEMEX has worked to implement sustainable standards and responsible practices through its whole value chain, including human rights, labor, antitrust and sustainability clauses in their contracts with suppliers. Each year the company evaluates and acknowledges the best-performing suppliers in the Supplier Sustainability Program.

The company has also emphasized reducing emissions, especially CO₂, dust, NO_x, and SO_x. As of December 31, 2018, CEMEX reduced CO₂ emissions by 8 million tons compared with its practices in 1990. The company is close to completing the installation of Continuous Emissions Monitoring Systems in 100% of its kilns. In addition, CEMEX is developing a circular economy system, through the conversion of non-recyclable waste to alternative fuels and raw materials for the cement process, using residues and by-products as substitutes for cement and natural aggregates. One of its 2030 goals is to introduce recycled concrete after the demolition of infrastructure as an alternative to other aggregates.

With the ambition to create a positive impact on the communities in which it operates, CEMEX has launched initiatives that both inside and outside its core capabilities. Examples of the former are *Patrimonio Hoy*, *Construyo Contigo*, *Yo Construyo*, and *ConstruApoyo*. Their purposes are to help areas affected by natural disasters in Mexico recover, finance construction materials to low income sectors, and train construction workers. Examples of the latter are investments in education and the development of capabilities for employability, community centers, women's economic empowerment, and other Community Engagement Plans that are contingent on the meetings with local communities, which allows CEMEX to identify specific needs and expectations and support community progress accordingly. These are integrated into the company's Corporate Social Responsibility strategy.

²⁵ With historical exchange rates. All data reported in US dollars. Source: Capital IQ, accessed August 31, 2019.

²⁶ Source: Capital IQ, accessed August 31, 2019 and CEMEX's 2018 Integrated Report.

Moreover, CEMEX invests in innovative productive activities and new entrepreneurial ventures that focus on creating solutions to social and environmental issues. In 2010, the company created the CEMEX-Tec Center for Sustainable Development that researches and collaborates with other actors from academia, civil society, and the public and private sectors, to contribute to sustainable communities with a good quality of life. Additionally, the company has implemented initiatives to protect biodiversity and water resources through Biodiversity Action Plans and water management plans in areas of operation with scarce water resources.

As a large multinational in an industry with high environmental impact, CEMEX has been changing the understanding of its core business to adapt to environmental concerns; as a result, it has become a more sustainable company. Subsequently, CEMEX has been included in many indexes and rankings related to sustainability.²⁷ To achieve this, the company has incorporated innovative sustainable practices in its core processes, even while it is the seventh largest company in the global industry by revenues, reporting an annual average revenue growth of over 7.5%.²⁸

C. Bancolombia - Colombia

As the largest Colombian financial institution, Bancolombia is part of the financial group Grupo Bancolombia, which offers different banking services and products. The bank is an outstanding multilatin and has subsidiaries in six other countries in the region. It is listed on the New York and Colombian Stock Exchange (Bloomberg, n.d.). Bancolombia supports and promotes the Sistema B Movement in Latin America. In 2018, Bancolombia was ranked in the Dow Jones Sustainability Report as the most sustainable bank in the world (Dinero, 2018).

The Bancolombia Foundation, part of the financial group, is in charge of sustainability and inclusivity initiatives, both in territories affected by Colombian armed conflict, and in areas with vulnerable populations. Its goals include creating programs for unbanked communities in remote parts of the country, and closing multiple development gaps between the rural and urban areas, for the agricultural sector, and for young people (Grupo Bancolombia, 2018).

For example, in order to improve the economic conditions of small farmers in rural areas, Bancolombia adopted an innovative risk management strategy to reach a population previously unattended by the financial sector. The impressive business transformation of small farmers in the program goes beyond traditional static and anecdotal social impact measurements.

In 2016, a large Colombian packaging company, Compañía de Empaques, that produces packages from fique natural fiber, realized the need to increase the supply of the company's raw material to attend the growing demand. While fique plant growers were willing to increase their production, they faced economic and structural challenges that prevented them from doing so. These small farmers were in Antioquia, a region severely affected by armed conflict during the last 55 years. They lacked access to credit to purchase and modernize their machinery, a sustainable means to cover their living expenses until

²⁷ Dow Jones Sustainability MILA Pacific Alliance Index, FTSE4Good Index Series, MSCI ESG Leaders Index, Mexican Stock Exchange Sustainability Index, the Carbon Disclosure Project, and Vigeo Eiris Best Emerging Markets Performers Ranking.

²⁸ Source: Capital IQ, accessed August 31, 2019.

harvest, and collateral to cover the risk and attract investors or financial institutions. Understanding these problems, the packaging company went to Bancolombia to propose a credit risk diversification model that spanned the entire value chain and that could benefit the fique growers.

The packaging company proposed that Bancolombia grant loans to small farmers, and pledged to support the payment of these credits by buying all the fique produced by the farmers above the market price. Loans would also allow farmers to both alleviate the costs associated with the crop and their living expenses until harvest. The loan moratorium period was two years. After this period, the bank would begin to receive the loan payments with their respective interests, creating a win-win relationship—Bancolombia had created a new line of business within its core activities. The bank and its Foundation decided to join forces to consolidate this new business model, following a process of continuous learning that promotes agricultural development and entrepreneurship while benefitting both organizations.

This is a case of a large multinational company with more than 100 years of experience that understands its edifying role in a society that needs drivers of progress and optimism. The ultimate business model that embeds social innovation mitigates the causes of conflict, such as the exclusion of financial and commercial systems, unemployment, and poverty. Consequently, it positively impacts the socioeconomic conditions of small farmers, their families and former combatants by establishing social cohesion through commercial activity. Moreover, the business model is aligned with peacebuilding initiatives that resonate with one of the most critical negotiating points of the peace agreement in Colombia: the ultimate goal of the “Integral Rural Reform” that seeks to return land to the displaced and encourage agricultural productivity by restoring peace in Colombia (Alto Comisionado para la Paz, 2016).

Bancolombia’s inclusive model shows that business innovation is needed to generate wealth, while closing inequality gaps and respecting nature’s boundaries. So far, transformations like this one have proved beneficial and successful, promising an ongoing source of economic and social progress and replicability.

D. Pacari — Ecuador

Pacari is a chocolate producer from Ecuador. Founded in 2002 by Carla Barboto and Santiago Peralta, Pacari had one main objective: to produce one of the highest-quality cocoas historically exported to Europe and manufacture chocolate locally with top quality standards. Barboto and Peralta decided to challenge the status quo in the chocolate value chain. They committed to a state-of-the-art production process combined with the objective of helping small producers in rural areas and low-income families to overcome long-lasting socio-economic barriers. Since then, they have certified more than 3,500 small-scale farmers in good practices related to crop management, ensuring fine flavor cocoa from an organic, sustainable and environmentally-friendly production process. They treat these small-scale farmers as their allies; the farmers’ relationship to nature and its equilibrium are an indispensable element of the product’s value, which contributes to a win-win transaction. Pacari pays a fair price, allowing farmer families to increase their knowledge of land protection and make them part of a human and social process of producing the highest quality chocolate (Pacari n.d.). The result of this production process is a chocolate bar well-known for its premium quality and organic and biodynamic production process. The biodynamic process at Pacari is defined as an agricultural practice where a crop, farm or land is considered a single complex organism with all its components working together for its own success.

One of Pacari's most significant innovations with great social impact was the redesign of the size of its traditional cocoa bags. Although cocoa production relies on a significant share of female workers, the heavy weight of the most common bags gave obvious advantages to men, who earned much higher income. Pacari decided to adopt smaller and lighter bags for women to carry more easily. The redesign of the bag allowed women to become active merchants and receive the corresponding share of payment without the intermediation of men. This innovation had a profound impact on the education and health of the farmer communities (CAF, 2019). In addition to this, Pacari managed to establish sustainable tourism experiences integrated in the cocoa value chain in the region of Santa Rita, where guided tours serve as an extra source of income for villagers. These tours emphasize the importance of processes and products that enable sustainable production practices and increased market value (Pacari, n.d.).

To sum up, Pacari has redefined the chocolate production value chain embracing sustainable policies. As a result, small-scale farmers overcome socio-economic barriers when the chocolate produced from their cocoa is sold world-wide as earnings reach small farmers' pockets. Pacari decided to build strong relationships with their suppliers by buying their product at fair prices, and by helping them to establish standards required to produce award-winning chocolate bars. Honoring the heritage of Ecuador's small cocoa producers, Pacari won the title of "*Gold product*" in the International Chocolate Awards (CAF, 2019) for six years running.

E. Intercorp — Peru

Intercorp is one of the largest business groups in Peru, a top player in financial services, retailing, tourism, real state, healthcare, and education. By the end of 2016, the 30 companies in the holding had \$4.8 billion in revenues; EBITDA of \$894 million; 60,000 employees; and more than 10 million customers (Porter & Ramirez & Merino, 2017). Intercorp defines itself as a business group committed to the development and welfare of Peruvian families that focuses on the growing Peruvian middle class by trying to combine profitability with the social mission of elevating and improving the lives of Peruvians (Porter & Ramirez & Merino, 2017).

Intercorp's largest business unit is that of its financial services, which includes corporate, and retail banking, insurance, retirement plans and brokerage services. The focus is on increasing banking inclusion for the middle class. To effectively accomplish this, Intercorp uses local mom-and-pop stores as the promoters of money withdrawal and payment services (Porter & Ramirez & Merino, 2017).

Intercorp owns Supermercados Peruanos, the largest supermarket chain in the country. Without losing market share and leadership, the company cooperated with the government to train farmers and small manufacturers in best practices so that they could raise quality and food safety standards as well as efficiency levels. In addition to this, the company joined the Peru Food Bank on its mission to collect and distribute food that was close to reaching its expiration date but still had optimal nutritional conditions, so that it could be served to lower income families through NGOs.

Casa Andina, a national hotel chain, is also part of Intercorp. It followed the same strategy as Supermercados Peruanos, training suppliers in worldwide quality assurance programs, such as Business Process Management (BPM) and Hazard Analysis and Critical Control Points (HACCP), so that their own businesses could grow (Porter & Ramirez & Merino, 2017).

Real Plaza, the largest shopping mall in the country, is Intercorp's real estate presence. Its growth strategy included opening smaller shopping malls in secondary cities, which in turn increased the commercial value of businesses located nearby, created new jobs, and enhanced the city's reputation.

With Inkafarma, Intercorp reaches remote locations to offer low price medicine. By opening branches in such locations, new job opportunities are created, and pharmacists can act as medicine advisors to counsel low income families.

Intercorp's education strategy focuses on strengthening primary and secondary schools as well as technical schools and universities for middle- and lower-income families. By combining technology with innovative teaching methods, Innova Schools' value proposition is based on four pillars: high-quality education, scalability, affordability, and profitability. It has managed to improve average test scores for its students, reach revenues of \$38 million, employ more than 1,300 teachers and serve 31,000 students (Porter & Ramirez & Merino, 2017).

In sum, Intercorp is an example of how a diversified business group can use social innovation to improve the conditions of middle- and low-income families. When social innovation forms part of the purpose of a corporation or a business group, and is well defined and driven by strong leadership, both strategic initiatives and daily activities of the company can lead to great social and economic results.

6.4. Conclusions

The business sector in Latin America has become increasingly aware of the importance of generating a positive impact on society and the environment as part of its core activities. The risk conditions as well as economic and social challenges have led companies to engage in social innovation not only as part of their Corporate Social Responsibilities, but as an indispensable element in their overall business strategies.

The business sector is innovating in business models, practices and products to offer solutions to the region's social and environmental problems. The cases described in this chapter show that for-profit companies can operate successfully in the market, not only reducing their negative impacts, but actively working to have positive social impact. Working in collaboration with civil society and governments, business actors can be active agents of positive change in society and nature.

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Chapter 7

Better Business for 2030 – Putting the SDGs at the Core

By the OECD Development Centre's Emerging Markets Network (EMnet)

- 7.1. Introduction
- 7.2. Opportunities for the private sector
- 7.3. Challenges for business
- 7.4. Conclusion

Executive Summary

An increasing number of firms recognize that making sense of the Sustainable Development Goals (SDGs) makes business sense. The Organisation for Economic Co-operation and Development (OECD) is committed to leveraging its capacity and expertise in a wide range of areas, from data collection to dialogue and peer-learning. This chapter explores ways in which the private sector can contribute to the SDGs by putting them at the center of decision-making. The analysis builds on the work of the OECD Development Centre's business platform Emerging Markets Network (EMnet).

7.1. Introduction

In September 2015, the United Nations (UN) adopted the 2030 Agenda for Sustainable Development and established 17 SDGs: a roadmap for transformation to end poverty, protect the planet and ensure prosperity for all (UN, 2017). These 17 goals include poverty reduction, gender equality, clean water and sanitation, decent work and economic growth, climate action and partnerships for development (Figure 7.1).

Figure 7.1. The 17 Sustainable Development Goals or SDGs



Source: UN, 2017.

Unlike the Millennium Development Goals (MDGs), which were launched in 2000 and aimed to address basic human needs throughout the developing world, this new set of goals actively involves diverse actors across society including the private sector, whose collective efforts outweigh what they could deliver individually (UN, 2000; UNIDO and UN Global Compact, 2014).

Achieving the SDGs will require a whole of society approach and “partnerships between governments, the private sector and civil society” (UN, 2017). Indeed, business-led initiatives, such as research and development partnerships, knowledge-sharing platforms, technology and skills transfer, together with infrastructure investment have the potential to optimize development outcomes, enable productivity gains, generate better quality jobs, strengthen skills and promote technological progress. In addition, the private sector is the premier agent of job creation, which contributes to development by boosting living standards, raising productivity, and fostering social cohesion (IFC, 2013; World Bank, 2013).

The private sector is considered essential to delivering sustainable development worldwide (OECD, 2016a). Achieving the SDGs will require a drastic rethinking of how to do business throughout the supply chain and how to engage in coalitions with other companies and with the public sector, in order to generate profit while having a positive social, environmental and economic impact. Over 1,500 companies participated in the UN’s Global Compact and stated that a strategic approach to sustainability can drive long-term financial value while improving productivity and growth today (UN Global Compact, 2018). However, even for businesses that value the relevance of the sustainability agenda, actively putting the SDGs at the core of their strategies remains a challenge, in particular when balancing sustainable development objectives with profitability (OECD, 2017a).

Some efforts to combine business and sustainability pre-date the adoption of the SDGs. Adhering to more responsible business conduct (RBC¹) was pivotal in encouraging companies to proactively

minimize negative impacts of their operations, especially in supply chains. Beyond operations, issues of social justice, community dialogue and the restoration of trust between citizens, institutions and the private sector have become an essential part of the equation. Furthermore, increasing inequalities in society over the last 30 years have contributed to mounting discontent and a fragmented social contract, highlighting the need for more inclusive growth and inclusive business (OECD, 2017b).

In this context, EMnet launched a thematic Working Group on Business and Sustainability in Emerging Markets in 2017 and hosted roundtable discussions with companies operating in emerging markets as well as in OECD countries. These discussions explored how businesses can take additional action to place the SDGs at the core of their activities, act responsibly in line with their RBC commitments, and balance the demands of their shareholders. Building on the outcomes of the meetings, this chapter provides an overview of current perceptions, ongoing strategies and suggestions to further optimize the private sector's contribution to the SDGs.

7.2. Opportunities for the private sector

Businesses increasingly see investments in sustainability as business opportunities despite the challenges involved (OECD, 2016a). There is a growing consensus that sustainability can enable companies to acquire new clients, penetrate new markets, promote innovation, explore new business models and both attract and retain talent. Individual companies recognize that achieving the SDGs creates market opportunities, even though the SDG agenda has unevenly been mainstreamed by Multinational Enterprises (MNEs) and does not form an integral plan of strategic planning across industry (Business & Sustainable Development Commission, 2017). There are nonetheless powerful incentives for doing so.

Companies that are more sustainable are more competitive

Evidence suggests that the business case for placing the SDGs at the core of companies' strategies is getting stronger. The Business and Sustainable Development Commission estimates that the SDGs will open up \$12 trillion of market opportunities by 2030 in areas ranging from food and agriculture, cities, energy and materials, and health and well-being (Business & Sustainable Development Commission, 2017). Indeed, companies adopting sound environmental, social and governance practices toward clients, suppliers, employees and the environment may be more competitive in the long run (Benhamou and Diaye, 2016), create more jobs, and employ more skilled, and female, workers (ILO, 2017). Evidence suggests that productivity gains generated by sustainable business conducts can outweigh the additional costs and in turn reduce overall unit labor costs. Employers that provide formal training for their employees, for example, pay 14% higher wages, yet are also 20% more productive.

A sustainable reputation can help companies attract and retain clients. In addition to being more competitive, there is evidence that firms can capitalize on their sustainability image through their pricing structure (WBCSD, 2017). A Nielsen study shows that the large majority of respondents were willing to pay a premium for products and services offered by sustainable businesses: up to 66% of customers, and 73% in the case of global millennials, are willing to pay more for a more sustainable brand (Nielsen, 2015). The analysis is based on a survey involving 30,000 respondents from 60 countries, and shows that consumers across regions, income levels and categories prefer businesses that remain loyal to their values. The report also mentions that consumers in emerging markets, such as in Latin America, Asia,

Middle East and Africa, are almost 30% more willing to pay a premium for sustainable offerings than consumers in developed economies. The reason, according to researchers, is that consumers in developing markets are physically closer to surrounding communities and more aware of the daily challenges. Other research has shown that customers are willing to pay more for a greener product with similar performance standards: 70% would pay a 5% premium in industries such as automotive, building, electronics, furniture and packaging, according to a survey assessing the sustainability of industry value chains (Miremadi, Musso and Weihe, 2012).

Access to new markets and opportunities

The SDG agenda has created a framework for researchers, entrepreneurs, and creative minds to work toward a more sustainable world. CEOs believe that the 2030 Agenda provides an essential window of opportunity to rethink and test approaches to sustainability; when surveyed, 89% of them said that commitment to sustainability is translating into real impact in their own industries (Accenture, 2016). In its Global Opportunity Explorer, for example, the UN Global Compact and partners took a systematic approach and closely studied the intersections between the fields of health, food, water, and energy, and, in turn, the intersection of these fields with technology, and mapped out new markets and new opportunities for business. Following consultations with 17,000 business leaders, they identified some 55 specific market opportunities (Connect4Climate, 2018).

In their Global Opportunity Report, the UN Global Compact and the project partners were able to match specific opportunities to lagging SDGs (DNV GL, 2018). The report highlights that reduced inequalities (SDG 10), responsible consumption and production (SDG 12), climate action (SDG 13), and life below water (SDG 14) have the biggest lag. For each of these SDGs, the report highlighted new potential business opportunities that may help to address these gaps. Some examples include:

Reducing inequalities through blockchain technology. Thanks to its secure encryption, blockchain is useful for securing land titles, which is essential for many small rural and urban entrepreneurs in countries with unclear land registries. Moreover, digitalizing supply chains using blockchain and smart contracts² can increase their transparency and promote a more even distribution of value added throughout the chain. Fuller transparency can also help customers know the origins and history of a product or its components. In Africa, where only about 30% of land has been fully surveyed, drones are making information on land ownership more readily available. Clear and transparent land titles enable access to finance with the land as collateral while allowing governments to levy property taxes more accurately to raise general revenue.

Innovation and responsible food supply sources can mitigate greenhouse gas emissions. The OECD Taxing Energy Use report states that putting a price on emissions and pollution through carbon pricing tools such as energy taxes and tradeable permits is an essential part of climate change mitigation strategies (OECD, 2018; OECD 2016c). In advance of legislation, multinational firms such as Mahindra & Mahindra have adopted internal carbon prices, often known as “shadow prices”, which put a financial value on carbon emissions (OECD, 2017c). Using these prices as a metric, Mahindra is able to make investment decisions that take emissions into account, leading to less-carbon intensive projects (WRI India and Shakti Sustainable Energy Foundation, 2018) and a corporate commitment to carbon neutrality by 2040 (Mahindra, 2018).

Sustainable construction techniques are reducing the construction sector's carbon footprint. The industry accounts for a large percentage of carbon emissions (25-40% globally) and of solid waste (up to 40% in the U.S.). Innovative building techniques leverage prefabricated blocks that can be taken apart easily and re-used as well as construction waste that can be transformed into new materials. 3D-printing can also mitigate the use of superfluous materials and reduce transport costs. Increasingly, architects and developers are seeking carbon neutrality standards for new buildings. Non-profits such as the World Green Building Council (WorldGBC) work with corporations to reduce energy and carbon emissions as well as water consumption (WorldGBC, 2018). Some companies have joined the cause: in 2017, JP Morgan Chase announced it would source 100% of global energy needs from renewable resources by 2020. The company has since worked to retrofit all its buildings with LED lighting to cut energy consumption by 50%, in line with the WorldGBC's goal of moving to net zero carbon (JP Morgan Chase, 2017). Major emerging market multinationals in the sector are increasingly adopting sustainable practices in their processes. Dangote Cement, the construction branch of the Nigerian conglomerate Dangote Group, highlighted its sustainability approach in its recent sustainability report (Dangote Cement, 2018). The "Dangote Way", operationalized in Africa, includes salient sustainable initiatives that reduce carbon emissions and water usage, set specific emission targets and report publicly on them, while promoting principles of a circular economy across the value chain (Dangote Cement, 2018).

Ocean resources represent an "asset" worth \$2.5 trillion per year (WWF, 2015), currently threatened by the incidence of waste. Some estimates indicate that the ocean will count more plastic than sea by 2050 (MacArthur Foundation, 2016). Consumers' preferences are increasingly driving sustainable packaging solutions. Global consumer goods companies are closely monitoring this trend. For instance, Unilever pledged in 2017 that 100% of its packaging was to be made out of recyclable plastics by 2025 (Unilever, 2017). Surging demand for fish, coinciding with the world's population growth, put pressure on fisheries. Aquaculture and ocean farming hold the potential to feed a growing population without further impairing the world's wild fish stocks. The total market for aquaculture is worth \$176 billion and is expected to grow at 4.6%, making it the fastest growing food industry (DNV GL, 2018). Companies are already applying aquaculture solutions to produce ocean foods at a commercial scale, thus moving towards the realization of SDG 14.

Other SDGs also provide significant opportunities. The International Energy Agency (IEA) describes opportunities that exist in energy-related aspects of the SDG 7 on affordable and clean energy (IEA, 2017a). In its sustainable development policy scenario, the IEA describes the policies necessary to achieve the objective of universal clean energy access, including capping levels of emissions as soon as possible, to be followed by a substantial decline, and a large reduction of energy-related pollutants. Without policy intervention, 700 million people will still lack energy access by 2030, and 2.3 billion people will still rely on polluting fuels for their basic needs (IEA, 2017b).

The investments associated with the IEA's Sustainable Development Scenario offer opportunities to the private sector. Examples include companies active in delivering energy solutions in decentralized systems far from the main grid ("micro grids"), firms active in the electrical vehicle industry and its supply chain, and businesses operating in energy transmission and distribution (IEA, 2017a). Companies such as Huawei have seized green energy solutions as a means to bring solar energy to rural and remote areas, while providing digital connectivity to the same areas (Huawei, 2018a). Its "PowerCube 1,000" solution

combines AI and enhanced digital technologies to provide a stable power supply in a green, intelligent, and cost-effective manner (Huawei, 2018a), while its reliance on solar energy makes it ideal for emerging markets endowed with ample solar energy, for example in Africa. By the end of 2018, the hybrid green energy solution had reached 170 countries and regions and more than 310 carriers and operators including MTN, Zain, Airtel, Vimpelcom, Telefónica and Vodafone (Huawei, 2018b; GSMA, 2013). African multinationals, such as Samba Bathily's Groupe ADS or Infinity Solar in Egypt, are also capitalizing on opportunities in the sector. Through Solektra International, a part of Groupe ADS' portfolio, Groupe ADS has been able to provide access to clean energy across 15 African countries, particularly in rural areas, using solar energy (Groupe ADS, 2019).

Sustainability leads to technological innovation

New technologies are enabling companies to integrate sustainability more easily into their operations. According to a UN Global Compact study, 75% of CEOs in over 100 countries stated that digital technologies are facilitating the adoption of sustainable practices (UN Global Compact, 2017). Mahindra & Mahindra, an Indian multinational automobile manufacturing company, invested in an agriculture-focused venture dedicated to enhancing farmers' productivity and ethical sourcing of food products through an extensive use of innovative technologies (MASL, 2018). This initiative is supporting the goal set by the Indian Council of Food and Agriculture of doubling farmers' income by 2022 (Indian Council of Food and Agriculture, 2016).

The OCP Group, the Moroccan multinational phosphate company, has a specific "Agribooster" program that enables African farmers to use digital technology to have a more successful growing season (OCP, 2018). The program's mobile platform is accessible in remote parts of Africa and boasts a variety of features including access to financing, a platform to sell and buy crops, agricultural support and counselling, and harvest history (OCP, 2018). The program has equipped 55,000 farmers since 2016, including 51,000 farmers in 2018 with knowledge and digital tools across Burkina Faso, Côte d'Ivoire, Guinea, Ghana, Kenya, Nigeria and Togo (OCP, 2018). Farmers involved became more competitive and increased their production volumes without having to travel long distances for access to agricultural resources (OCP, 2017).

Sustainable companies attract talent

The generation born between 1980 and 2000, also called "millennials", is characterized by a lower level of loyalty to their employers than previous generations, and higher attention to aligning employment with personal and ethical values. This phenomenon is redefining the employer-employee relationship. A ManpowerGroup study highlights that the majority of people currently entering the workforce say that purpose is a priority in their choice of work (ManpowerGroup, 2016).

With increasing job mobility, only one in five millennials is expected to stay in the same field and progress with one employer; 75% of millennials, interviewed in 2008, said that they expected to have two to five employers throughout their lifetime (PwC, 2011). It is also important to notice that 86% of respondents would consider leaving an employer whose values no longer met their expectations (PwC, 2011). Considering this, companies should be more inclined to improve their employees' working experience and offer fair benefits. Companies that invest in social responsibility and sustainability can

potentially create a sense of belonging and be more likely to retain talents, keep employees motivated and improve productivity.

7.3. Challenges for businesses

Despite generating significant opportunities, challenges remain in actively putting sustainability at the core of business strategies and in balancing sustainable development objectives with profitability. Achieving the SDGs will require a drastic rethinking of doing business throughout and beyond the value chain.

The SDGs' awareness gap

While the private sector is expected to play a major role in achieving the 2030 Agenda for Sustainable Development, businesses have expressed that this major shift will not happen without a higher level of global SDG awareness among all relevant stakeholders. As the public's awareness increases, companies will be able to conduct sustainable business more effectively and attract and retain better-informed customers. Evidence shows that SDG awareness is increasing, but significant hurdles remain.

As described above, evidence shows that customers are more likely to buy goods and services from companies that endorse RBC (PwC, 2015). Increasing sustainability awareness can therefore be a way to incentivize a positive relationship between customers and businesses, in which the importance of the SDGs is recognized and more companies are encouraged to follow the example of industry leaders. According to a large, nearly 1,000-firm global survey conducted by PwC, 71% of business respondents said they had started planning how they will engage with the SDGs, 13% had identified the tools they needed to assess their impact against the SDGs, while 41% said they would embed the SDGs into their strategy within five years (PwC, 2016).

The dilemma of reconciling profitability, risk management and sustainability

In spite of clear incentives to further invest and act sustainably, many operational challenges remain. Businesses in developing countries often work in risky environments, where corruption is widespread, the rule of law is not enforced, and infrastructure and services are poor. Maintaining profitability and navigating these challenges thus become first order priorities, often at the expense of sustainability, which is seen as a sunk cost. In addition, some companies have had difficulty keeping up with their commitments to RBC. The OECD reports that 34 new violation instances were submitted against individual businesses in 2016 under the OECD Guidelines for Multinational Enterprises (OECD, 2016b). Alleged violations span across several sectors and involve human rights, due diligence, supply chains, stakeholder engagement and the environment. In a 2017 case, a Dutch bank was required to publish specific, intermediate targets to reach the Paris Agreement (UN, 2015), in order to prove observance of the OECD guidelines to which this company had committed, in a case submitted by NGOs to the guidelines' national contact point (OECD, 2019). The case shows that sustainable and fair business practices have become important to civil society and are both valued and closely examined.

A number of initiatives have attempted to resolve this dilemma, and support the private sector in reconciling profitability, risk management and sustainability. One such initiative is the Human-Centered Business Model (HCBM²). The HCBM seeks to balance profitability with social and environmental sustainability as well as ethical and integrity principles. Enterprises volunteer to adopt and embed certain

principles and values into their bylaws as goals and to establish performance indicators to assess and measure how they are reaching those goals. Because the model takes a bottom-up approach and pays special attention to micro, small and medium-enterprises, it has the potential to address the challenges of many countries, including developing countries, in some cases with weak legal frameworks, where enterprises seek ways to sustainably position themselves within global markets. (Bonaglia and Nicoli, 2019)

Challenge of seeing sustainability as an integral dimension of core business

Participants in EMnet meetings highlighted the importance of integrating sustainability into their core business. They use the SDG framework to describe efforts in a common language and as a way to track and communicate them, aligning with the global sustainability agenda. This requires a major shift towards a more strategic approach, a step away from picking a few selected SDGs only, and instead focusing on horizontal issues and their link to sustainability strategies. Whereas only 1% of companies planned to assess their impact on all 17 SDGs, 34% indicated they were planning to select specific targets, according to a survey by PwC on businesses and the SDGs (PwC, 2015). By integrating the SDGs into their core strategy and taking a systemic approach to sustainability in the actual implementation of these strategic guidelines, MNEs could work towards enhancing their contribution to the 2030 agenda.

Siemens, a German industrial manufacturing company, uses a methodology called “Business to Society”. It entails an objective measurement of the impact of operations on local societies (Siemens, “Business-to-Society”) in which the firm operates. The “outside-in” approach focuses on the needs of society and the environment, using the SDGs as a roadmap. The “inside-out” approach analyses how their operations contribute to and add value to those needs. Through this methodology, Siemens considers all of the broader needs of society, including the ones that may not appear to be relevant to the company’s immediate operational goals at first glance (Siemens, n.d.).

Importance of including sustainability in management education

Discussions in the EMnet meetings highlighted the importance of including responsible business practices and sustainability into management education. Business schools are the primary source of management education for future corporate leaders. However, even though the number of courses offered on corporate social responsibility and sustainability has increased over the years, they are still very detached from core management disciplines (Kolb, Fröhlich and Schmidpeter, 2017). Furthermore, there is evidence that while senior management is well aware of the importance of sustainability, middle management and employees in general do not know the SDGs or do not actively engage with them on a frequent basis (CSR Europe, 2017). In response, some universities have begun to incorporate sustainability as part of the core discipline of their programs. The CFA Institute, which trains chartered financial analysts, also has taken note of this trend, and reviewed its curriculum to include sustainability at the core of its curriculum (CFA Institute, 2017). Some have furthermore argued that “sustainability” has actually become a selling point for Master of Business Administration (MBA) programs. MBA accreditation commissions such as the European Quality Improvement System (EQUIS), the Association of MBAs (AMBA), and the Association to Advance Collegiate Schools of Business (AACSB) all added to their criteria that a business program should contain sustainability as a component of the syllabus (Scott, 2015).

Lack of coordination across supply chains

During the EMnet meetings, companies discussed the challenge of coordinating sustainability efforts within their respective internal operations, particularly throughout their supply chains. According to RBC principles of “do good” while “doing no harm”, companies are also required to look at their suppliers and buyers, and take responsibility for their actions as partners in the value creation process (OECD, n.d.). High-profile cases have shown that non-compliance with RBC standards can have negative effects on the reputation of certain brands. Through these discussions, companies agreed that embedding sustainability and accountability throughout supply chains is essential to achieving the SDGs. The OECD has been supporting these efforts for a long time through the OECD Guidelines for Multinational Enterprises. The guidelines promote RBC for MNEs, not only in the way they conduct themselves, but also by avoiding harmful impacts caused by their supply chains (Nieuwenkamp, 2014).

The supply chains of a multinational company can be diversified and widespread. For example, approximately 50 different suppliers produce the components for a Dell Computer (WTO, 2013). Monitoring these complex supply chains can be cumbersome and difficult. During discussions, EMnet members noted that the SDGs could also serve as a roadmap for suppliers and buyers, considering that 75% of the world’s poorest population live in the same rural areas where many supply chains begin (Business & Sustainable Development Commission, 2017). By integrating sustainability across supply chains, companies can protect and create value at the same time (GRI, UN Global Compact and WBCSD, 2015). Many companies have formalized demands on sustainability in specific terms and conditions in contracts with suppliers. A company such as Siemens-Gamesa, for example, organized supplier events to share the company’s challenges and goals with respect to sustainability. Siemens-Gamesa has also audited all of its key suppliers in order to align its supply chain with its CSR Master Plan (Siemens-Gamesa, 2018).

Addressing SMEs’ engagement with SDGs through multinational corporations

Small and medium-sized enterprises (SMEs) account for more than half of formal employment worldwide and can play a significant role in achieving the SDGs. In emerging economies, SMEs account for 43% of jobs, an estimate that increases to 90% when considering the informal sector (Kamal-Chaoui, 2017). However, SMEs can often lack the capacity, capital and incentives to incorporate sustainable practices in their business operations (OECD, 2017d). Multinational enterprises can and should play a role by incentivizing SMEs in their value chains so that they incorporate an SDGs approach into their operations. MNEs can also lead by example through their market power: by supporting a critical consumer mass that validates a sustainability premium (i.e. a higher price for a product produced in a sustainable manner), MNEs can thus establish an environment that encourages other firms to focus on sustainability.

EMnet discussions also highlighted successful MNE and SME partnerships. Larger enterprises can benefit from investing in SMEs and getting access to new markets. The French multinational energy company ENGIE, for example, has set up a corporate impact venture fund that invests in social enterprises that aim to provide sustainable energy access for vulnerable population groups around the world (ENGIE, 2016a and 2016b). Through these investments, ENGIE offers finance to SMEs in the energy sector, whilst gaining access to a new market that it could not reach before.

Internal and external accountability – measuring progress against the SDGs

To achieve the SDGs by 2030, businesses stressed the importance of establishing clear internal and external accountability benchmarks. This can provide MNEs with mechanisms to monitor their progress towards meeting the SDGs. An Accenture survey found that 86% of CEOs believe that standardized impact metrics will be important in unlocking the potential of business on the SDGs. Furthermore, 73% of respondents believe that business should develop common indicators to measure and communicate impact on the SDGs (Accenture, 2016; WBCSD, 2016).

Discussions during the EMnet meetings suggested sustainability evaluations should be considered part of the overall business performance assessment. There was, however, agreement that there is no simple way to measure sustainability and compare results. In this regard, Danone, a French multinational food-products company, has designed a program called “Danone Way”. Danone Way uses a set of guidelines to implement and monitor sustainability in each business unit (Danone, 2017). Through these guidelines, Danone can measure the company’s overall progress towards the SDGs through each business unit’s performance. Each unit is therefore internally accountable and responsible for helping the company integrate sustainability goals into its business operations.

As a general approach, businesses touched on how MNEs need to be accountable to their clients and to the public on the actions they take, as they work towards becoming more sustainable. In this context, adopting an overall corporate strategy on RBC is essential to mitigate reputational risks. As sustainability becomes more mainstream, various countries have started publishing information on specific carbon emissions or climate risk by individual companies (EY 2013). “Virtual whistle-blowing” can damage a firm’s reputation, especially when its commitment to sustainability is seen as superficial or disingenuous. Recent examples demonstrate how discovering potentially unlawful working conditions in the value chains can damage the reputation of specific industries, such as the case of the garment industry (Moulds, 2015).

7.4. Conclusion

The SDGs provide an opportunity to rethink approaches to sustainable value creation. It has therefore become increasingly relevant for businesses to adhere to the SDGs and to the sustainability agenda set out in Agenda 2030. There are many ways in which companies can integrate sustainability into their operations. Having companies’ leadership prioritize the SDGs can help ensure that sustainability is built into the underlying corporate culture and that efforts towards achieving SDGs take root over time, across value chains and within all layers of the company.

Focusing on sustainability also makes business sense, allowing companies to achieve higher levels of labor productivity over the long run and enabling multinational enterprises to remain more competitive to meet the needs of their client base while creating a sense of shared value.

It is therefore not surprising that there is a growing dynamism to sustainability initiatives under the umbrella of the SDGs. More specifically for multinationals based in emerging markets, efforts in support of the 2030 Sustainable Development agenda are increasing and intensifying. From Latin America to Africa and Asia, corporations are implementing strategies and defining projects to reduce carbon emissions, save water, and create circular economy concepts. Although progress is not still heterogeneous across companies or industries and while it is still hard to measure and compare, the momentum towards

more sustainable production and more responsible business conduct has found fertile ground in emerging markets.

At a time when frameworks to encourage this transition struggle to keep pace, EMnet through its Working Group aims to create a convening space to support the private sector in addressing the challenges identified in this chapter.

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NOTES

¹ Above all, responsible business conduct (RBC) entails compliance with laws, including human rights, environmental protection, labor relations and financial accountability, even in countries where these are poorly enforced. It also involves responding to societal expectations communicated by channels other than the law, e.g. inter-governmental organizations, within the workplace, by local communities and trade unions, or via the press. Private voluntary initiatives addressing this latter aspect of RBC are often referred to as corporate social responsibility (CSR).

² Smart contracts are trusted transactions directly between parties without the need for a central authority, registry, legal system, or enforcement mechanism. The contract is written in lines code and distributed over a decentralized network accessible via the web. The term was first coined in 1997 by the American computer scientist Nick Szabo.

³ The HCBM project originated in 2015 within the World Bank's Global Forum on Law, Justice and Development and is now based at the OECD's Development Centre. It underpins an innovative ecosystem of sustainable business based on six pillars. First, a set of principles that give a new purpose to corporations. Second, updated legal frameworks and corporate governance coherent with those principles. Third, the alignment of business goals and practices with environmental, social and governance (ESG) requirements set by responsible financiers and shareholders. Fourth, good practices of public and private procurement that encourage, for example, green, social and sustainable procurement. Fifth, effective tax systems that incentivize/penalize the positive/negative social and environmental impact of businesses. Sixth, and final, a change of business paradigm from shareholders to stakeholders' primacy.



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