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EMERGING MARKET MULTINATIONALS REPORT 2022

Reinventing Global Value Chains

Cornell
SC Johnson College of Business

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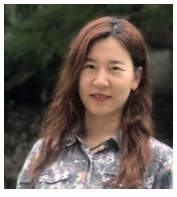

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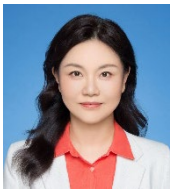

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Preface

Andrew Karolyi, Dean and Professor of Finance and Harold Bierman Jr. Distinguished Professor of Management
Founding Co-Academic Director, Emerging Markets Institute
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You can make a wise choice to take a deep dive into this year's Emerging Market Multinationals (EMM) Report for 2022, dear readers and friends of the Emerging Markets Institute (EMI) of the Cornell SC Johnson College of Business! This is the first year of the second decade of EMI and our editors, Drs. Anne Miroux and Lourdes Casanova, have decided appropriately to focus on "Reinventing Global Values Chains" as the report's theme and that of the annual conference last November 2022. It is particularly apt given the cool political and economic winds that blow through the emerging market world after now decades of economic and financial globalization from which they have derived massive economic gain. It is the Global Value Chains (GVCs) – these ligatures of connectivity across economic systems on which multinational corporations have come to depend to add value - that have been allowed to blossom over these decades. Headwinds from a ferocious global pandemic and its lockdown policies, from acrimonious trade and financial disputes (US-China, for one), from geopolitical conflict (Russia-Ukraine, for one), and from the rise of nationalist sentiments (in too many places to count) have exposed the vulnerabilities of GVCs. The annual conference and the report herein offer up example upon example of ruptures to GVCs, some of which may be temporary but many of which may have long lasting impact. Long-lasting in the uniquely volatile, uncertain, complex, and ambiguous (VUCA) way that emerging market environments present themselves to policymakers, corporate officers and investors.

There are at least three parts of the report to which I would encourage your direct your focus. The first is, of course, the picture of the EMM landscape, a core component of the annual EMM Report. We see the continued dominance of Chinese multinationals and the rise of energy companies through the COVID-19 pandemic, but what we learn is just how pervasive the geographic footprint the EMMs have become through export sales and through expansion via mergers, acquisitions and greenfield investments. Note how EMMs from Latin America – Brazil, Mexico, and now Chile – are rising up the ranks of the top 500 EM multinationals. I found fascinating the special chapter on innovation and technology in emerging markets, particularly stemming from the rise of FinTech businesses. There is a discussion about the potential for central bank digital currencies (CBDCs), cryptocurrencies in emerging markets, especially those with unstable fiat currency arrangements, and how their rise could be transformational (or not) toward deepening financial inclusion for many households in those societies now left behind. The most controversial chapter – one that was actively debated and discussed in the EM advisory board and the November conference – is on a new ranking of sustainability at the country level among emerging economies. The innovative approach in the chapter is to expand Environmental €, Social (S), and Governance (G) metrics at the country level to join Development (D) indicators with the implication that there is a delicate balancing act between D and E+S+G for policymakers, especially for emerging market leaders. I strongly recommend that you invest yourself in this chapter!

I offer congratulations to Editors Miroux and Casanova for another excellent EMM Report for 2022. I offer up hearty congratulations to the authors of many of the external contributions to the EMM Report. As always, we at the Cornell SC Johnson College of Business offer up our profound thanks to those who continue to give generously of their time and treasure to support the EMI, including its exceptional advisory board, its dedicated benefactors (Thank you again, Rob and Gail Cañizares!), our dedicated EMI affiliated faculty members, and the many current and past EMI Student Fellows who help make our collective efforts vital and meaningful. Allow me to offer special congratulations to EMI Advisory Board Member Paul Kavuma MBA'93, who was honored at the EMI Conference in November 2022 as the inaugural Cañizares Family Emerging Market Alumni Leader for his pioneering contributions toward building Africa's economic and financial market resilience.

Here's to a thought-provoking read of the Emerging Markets Report 2022!

Acknowledgements

The Emerging Market Multinationals Report (EMR) 2022 has been authored by Lourdes Casanova, Senior Lecturer, Gail and Rob Cañizares Director, and Anne Miroux, EMI Faculty Fellow, at the Emerging Markets Institute (EMI), Cornell S.C. Johnson College of Business, Cornell University.

The authors are grateful to Daniel dos Anjos, the leading Researcher, and to Xingqi Ye, researcher at EMI. Our thanks also go to the interns in the summer of 2022 Maria Paula Romero Fernandez, Juan José García Agudelo, Yuliana Otalora Heredia, Nicolás Hernando Orjuela Pava, Natalia Jaramillo, Eunbin Kim, Andrew Lim, Vritika Patni, Ravin Nanda, and Sri Ravisankar for their contribution to the Report. Special thanks also to Shailja Bang Shah for her work in leading the D-ESG Ranking project, and to Christian Goranov, Vineetha Pachava, Julian Galarza, Travis Thai, and Noel Liu for their significant contributions in different phases of the project. Sara Alex and Mihika Badjate contributed to editing the report.

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The report also benefited from comments and discussions with Andrew Karolyi, Dean of the Cornell S.C. Johnson College of Business and College Dean for Academic Affairs; Astrit Sulstarova, Chief, Investment Trends and Data Section, UNCTAD; and Members of the EMI Academic Advisory Board.

Members of the Emerging Market Research Network Veneta Andonova, Anabella Dávila and Juana García from Escuela de Administración at Universidad de los Andes in Colombia as well as experts from academia, business and international organizations - Momina Aijazuddin and Meraj Husain (IFC), Daniel Armanios and Natharat Mongkolsinh (Oxford University), Tony Carranza (IDB), Kalman Kalotay and Csaba Weiner (Institute of World Economics), John Manners-Bell (TI and Foundation for Future Supply Chain); Lorenzo Pavone, Lamia Mounavaraly, Melanie Vilarasau Slade and Simon Baumert (EmNet, OECD development Center); Chen Limin, Wang Hongxin and Bu Xuelin (Wuhan University) - contributed chapters to the Report.

Our special thanks go to the EMnet team at the OECD Development Center, a close partner of EMI and contributor to the EMR for from the first edition in 2016 as well as to the IDB, the IFC at the World Bank, and UNCTAD.

As always, our monthly discussions with the Emerging Multinationals Research Network partners - Veneta Andonova and Juana García at Universidad de los Andes (Colombia) , Armando Borda at ESAN University (Peru) , Ricardo Buitrago at Tec de Monterey, in Mexico, Fernanda Cahen at FEI in Brazil, Anabella Dávila at Tec de Monterrey in Mexico, Diego Finchelstein at Universidad de San Andrés in Argentina, Kalman Kalotay at Institute of World Economics in Hungary, Moacir de Miranda Oliveira Jr. at Universidad de São Paulo in Brazil inspired the content of the Report.

Executive Summary

The global economy has gone from one crisis to another over the past few years. The COVID pandemic was not over yet when the war in Ukraine erupted, adding to the uncertainty of the times. The October 2022 World Bank/IMF growth projections are down again, and even if economies are not affected in the same way, all are impacted. Among emerging economies, oil, gas, and commodity producers may fare better, while others will see their situation further aggravated because of rising food and energy prices.

Global value chains (GVCs) have been one of the backbones of globalization, interconnecting economies all over the world, and bringing into the production line many countries that were not part of the traditional production and trade networks. Decades of liberalization enabled GVCs to develop based on economic rather than political imperatives. But this has changed since the Global Financial Crisis and the ensuing recession. The US-China trade war is an illustration of this progressive shift. The COVID pandemic and the conflict in Ukraine have further highlighted the increasing role of governments in business and economics and exposed the vulnerabilities of global value chains. Added to that the climate change imperatives and societal demands, and we can see that we are entering a period of profound transformation of GVCs. This is likely to have substantial consequences for emerging economies as many have built their economic growth on increased GVC participation.

The transformation of GVC is not the only parameter weighing on emerging markets' future. It is in this context that the EMI Report monitors the performance of emerging market multinationals. It also examines the growth prospects of emerging economies in today's highly complex and uncertain world. The Report also analyzes the transformation of GVCs over the past two decades, and deals with GVC related issues, such as the potential impact of sustainable finance on GVCs, or how financial innovations could help micro and small enterprises (MSMES) integrate GVCs. The following summarizes the key messages of the chapters included in this volume.

PART I

Chapter 1. EMERGING MARKET MULTINATIONALS CONTINUE TO MOVE AHEAD UNDER UNCERTAINTY

Lourdes Casanova, Senior Lecturer and Gail and Rob Cañizares Director
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The past few years saw a trend of foreign disinvestment, impacting a substantial share of the global economy. The projected global recovery from the pandemic was slowed down by the Russia-Ukraine War, which has triggered another wave of sanctions after the US-China trade war. This chapter compares the performance of emerging market multinationals in this context. It documents the resilience of EMNCs during the crisis, especially the continued dominance of Chinese MNCs and the growth of energy companies from other emerging markets. By comparing developed and emerging markets, it also shows that while the U.S. still has the most profitable and efficient companies as well as the largest equity market, the gap between the U.S. and China is narrowing. The chapter also includes an examination of the top 500 largest companies from emerging markets, the top 500 EMNCs.

Keywords: Emerging Markets Multinationals, Foreign Direct Investment, Energy, Russia-Ukraine War

Chapter 2. U.S. COMPANIES CONTINUE TO LEAD THE WAY GLOBALLY

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In this chapter, we document the global footprint of emerging market multinationals. We analyze the internationalization progress of E20 companies, track cross-border merger and acquisition deals, and identify the drivers for globalization across firms in different countries. We also compare E20+1 companies' investments in research and development to exemplify the emergence of new innovative powers. We show the United States' leading role as a global investor and an R&D spender and China's rapidly growing international presence both as an investor and innovator.

Keywords: Internationalization, mergers and acquisition, foreign investment, Greenfield investments, FDI, OFDI, R&D investment

Chapter 3. EMERGING ECONOMIES MOVING INTO A VOLATILE, UNCERTAIN, COMPLEX, AND AMBIGUOUS (VUCA) WORLD

Lourdes Casanova, Senior Lecturer and Gail and Rob Cañizares Director
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This chapter examines the growth of emerging economies in a world struck by another crisis, i.e., the war in Ukraine, and highlights the consequences of the conflict for these economies because of its impact on the energy & commodity prices, interest rates, inflation, and their debt situation. The chapter pays particular attention to the currency volatility faced by many emerging markets caused by the COVID pandemic and the war, and, in that respect, shows the pioneering role of emerging markets in the adoption of digital currencies. The chapter also briefly examines global value chains as they go from one crisis to another.

Keywords: Emerging markets, E20+1, Central Bank Digital Currencies (CBDC), Economic growth

Chapter 4. EMERGING MARKETS ECONOMIC GROWTH AND ESG (EMI D-ESG) COUNTRY RANKING 2022

Shailja Bang Shah, Research Fellow
Lourdes Casanova, Senior Lecturer and Gail and Rob Cañizares Director
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This chapter attempts to measure sustainable growth in emerging economies and comparing them among themselves. The – Economic Growth (D), Environmental (E), Social (S), and Governance (G) ranking explores the 21 "EMI "E20+1 (China)" countries combined performance in economic growth and ESG. The goal is to develop a framework with several variables in those four pillars adapted to the Emerging Markets realities and measure their progress. Ultimately provide some guidelines in this matter.

Keywords: Environmental variables, social variables, Governance variables, D-ESG, Development, Economic Growth, Economic Development

PART II

Chapter 5. A PRIVATE SECTOR PERSPECTIVE ON ESG INVESTMENT FOR DEVELOPMENT IN EMERGING MARKETS

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Melanie Vilarasau Slade, EMnet Co-ordinator
Lamia Mounavaraly, EMnet Consultant
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The current economic turbulence in emerging markets, caused by multiple factors including the repercussions of Russia's war in Ukraine, a divergent post-Covid-19 recovery process, global supply chain bottlenecks and inflationary pressures risk slowing down the development of sustainable finance in emerging markets. Nevertheless, the opportunity, as a new source of capital that contributes to achieving the Sustainable Development Goals, remains a significant one. This chapter gives a private sector perspective on ESG investment in emerging markets and points to policies that could maximise the impact of sustainable finance on inclusive growth and green transition. The analysis is based on the work of the OECD Emerging Markets Network (EMnet), the OECD's business-led platform for dialogue and analysis on emerging markets.

Keywords: Global supply chains, Sustainable Development Goals, sustainable finance, sustainability, emerging markets.

Chapter 6. INNOVATIVE AND DIGITAL FINANCIAL SOLUTIONS FOR MSMES IN THE POST-COVID ERA

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Global value chains (GVCs) have faced a turbulent past few years, in the wake of the Covid 19 pandemic and the Russia-Ukraine conflict. This instability has highlighted the interconnectedness between countries via GVCs, but also raises questions about the risks, uncertainties, and dependencies they have created. The sudden shock to global trade has reverberated beyond large companies to small businesses in emerging markets, which have increasingly participated in the global economy over the past few decades. These conditions have added urgency for digital solutions to ease the cost of doing business and improve access to finance for micro-, small-, and medium-sized enterprises (MSMEs). This chapter discusses some of the major trends in digital

financial solutions for MSMEs through the IFC experience and highlights the need for further responsible investment and innovation in this space. Financial innovations like supply chain finance (SCF), embedded finance, and electronic warehouse receipt (EWR) financing have the potential to integrate MSMEs into GVCs while safeguarding the financial stability and integrity of the global trade ecosystem.

Keywords: Global Value Chains, Russia-Ukraine conflict micro-, small-, and medium-sized enterprises (MSMEs)*, emerging markets, digital financial solutions, financial innovations, supply chain finance (SCF), electronic warehouse receipt (EWR)*

Chapter 7. MULTI-LATINAS: AGENTS OF CHANGE IN EMERGING MARKETS

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Latin America and the Caribbean (LAC) has been one of the regions most impacted by the COVID-19 crisis and only some sectors were able to recover by the end of 2021. Moving forward, as a complement to public sector efforts on fiscal and monetary policy, the private sector must play a key role in accelerating the region's recovery. Multilatinas can play an important role as agents of change in emerging markets through their unique capacity to create jobs, innovation, and investment. Research on multilatinas provide a general overview of these business, what motivates them, and how they differ from other multinational firms. The IDB works through many initiatives to embolden them to generate a positive socioeconomic impact in the communities in which they operate, including IndexAmericas, which was designed to encourage and recognize corporate sustainability behaviors among corporations operating in LAC. As companies continue emerging and expanding throughout the region, sustainability must be a core focus for these firms.

Keywords: Latin America and the Caribbean, Multilateral Development Bank, Private Sector, Multilatinas, Sustainability, ESG, Development

Chapter 8. DIGITAL STARTUPS: TOWARDS A MORE SUSTAINABLE ECONOMY IN LATIN AMERICA

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Sustainability has been a priority in the global political agenda and there is pressure on companies in Latin America to address some of the biggest social and environmental challenges. As a result, the ESG perspective has become a must-have rather than a nice-to-have element of doing business in the region. Among the most dynamic business domains in the region is the local entrepreneurial ecosystem, the value of which has risen to USD 221 billion in 2021. After analyzing the business models of the companies in the investment portfolio of the most prominent venture funds in Latin America we find that there is a significant presence of startups that directly address burning social problems. To a lesser extent there are startups whose business models alleviate environmental pressures, while the governance aspect of the ESG perspective is almost entirely absent.

Keywords: ESG, venture funds, entrepreneurial ecosystem, Latin America

Chapter 9. THE 'GREAT RESET' OF GLOBAL VALUE CHAINS

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Political forces are having an increasingly transformational effect on Global Value Chains. The impact of the Covid-19 pandemic followed shortly afterwards by Russia's invasion of Ukraine has clearly demonstrated the political ramifications of failing supply chain and logistics systems. During this time, governments of all persuasions have adopted a far more interventionist approach to ensure higher levels of supply chain resilience. The origin of the process of change can be traced back over a decade. The Great Recession of 2008 resulted in the disruption to flows of finance, the pivot of many emerging economies to an increasingly assertive China and a heightened awareness of risk at Board level. More recently security concerns over China's use of advanced technologies for military purposes and tensions over Taiwan, have led the US to promote the concept of 'ally sourcing' which could lead to the bifurcation of global supply chains along political lines. There is little doubt that Global Value Chains will need to evolve to reflect these societal, economic, and geo-political forces within an increasingly complex market landscape.

Keywords: Global Value Chains; Globalization; Risk mitigation; Supply chain disruption; Great Reset; Ally sourcing; Re-shoring; Near-sourcing

Chapter 10. THE IMPACT OF SANCTIONS ON RUSSIAN BUSINESS ABROAD AND HUNGARIAN BUSINESS IN RUSSIA: PARALLEL STORIES OF ADJUSTMENT

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This chapter examines how the sanctions imposed on Russia after its 2022 invasion of Ukraine have impacted Russian firms, their direct investment abroad, and Hungarian business presence in Russia, and, in particular, how Russian and Hungarian firms have adjusted to this new reality. It highlights the main commonalities, such as the difficulties of access to finance transactions and the interruption of logistics and supply chains, especially in the areas of technology goods. The chapter also looks at the main differences between Russia and Hungary. In Russia, large firms with exposure to the West have been facing major difficulties in their international operations and have focused their efforts on mitigating the effects of sanctions. On the other side, Hungarian firms investing in and/or exporting to Russia typically try to hold their ground in the Russian market. They are attempting to overcome difficulties such as risks of foreign exchange and non-payment, issues with logistics and supply chain disruptions, problems with banking and financial transactions, increased time and costs of international shipping due to altered routing, additional administrative burdens at the border, air travel restrictions, and a constant need for information to adapt to sanctions and countersanctions. It is uncertain whether the generally positive attitude of Hungarian firms towards staying (and even taking advantage of the situation to expand further) will change over time. The challenges may become too great to take on, not only for smaller, resource-poor, and less-experienced firms, but also for stronger enterprises.

Keywords: Hungary, Russia, multinational enterprises, outward foreign direct investment, sanctions

Chapter 11. GLOBAL PRESSURES AND EMPLOYEE-CENTERED REPORTING PRACTICES

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The recent internationalization of leading Latin American companies uncovers tensions due to the global demands on social practices and the way to report them. Traditional social practices of these companies aim to enhance employee and relevant stakeholders' welfare but contrast with global requirements of international institutions or global value chains (GVC). Thus, this chapter presents the changes in the Latin American multinational corporate reports' cover letters on employee-centered practices considering the companies' internationalization and participation in GVCs. The analysis shows a late entrance to publishing sustainability reports, and the employee-centered practices received few entries in the cover letter. The description of such practices used the language of sustainability and competitiveness (performance management, human rights, ethics, diversity, gender equality, or inclusion training). The reporting frameworks of the Global Reporting Initiative (GRI) and Global Compact (GC) seem to exercise more pressure to comply with the global social standards than other actors of GVC.

Keywords: Latin American Multinationals, Sustainability Reporting, Global value chains, Employee-centered practices

Chapter 12. INVESTMENT AMIDST POLITICAL TURMOIL: MNC R&D ACTIVITY IN THAILAND

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In this chapter, we explore how multinationals (MNCs) invest in R&D amidst political turmoil. We focus our inquiry on the case of Thailand. The country is an illustrative case for such activity because despite having numerous coups, the country has also simultaneously experienced significant economic growth. Using a government survey of R&D spending collected amidst the most recent 2014 Thai military coup d'état, we obtain descriptive insights into the country's MNC landscape, MNC R&D investment tactics amidst the coup, and sectors where such investment are mostly likely to take place. More specifically, we find that Japan is the most active in the Thai MNC landscape. We also find that MNCs are associated with increased R&D spending following the coup, though at a lower rate than domestic firms. We also find this increase is largely attributed to MNCs from G7 countries, whereby Japan-based MNCs seem the first to act, followed more slowly by other G7 countries. While MNCs tend to invest in more variable R&D spending (both pre-and post-coup) and in more high-tech sectors (especially post-coup), MNCs from countries whose business cultures are more politically oriented tend to invest less in R&D post-coup. We conclude with potential areas of future inquiry that we hope can be spurred from this exploratory, agenda-setting chapter.

Keywords: Research and Development, R&D, Thailand, multinationals, G7, business culture, political turmoil

Chapter 13. PERSONAL, ORGANIZATION AND NATIONAL POLITICAL CONNECTIONS: IMPACTS ON CROSS-BORDER ACQUISITIONS BY CHINESE LISTED FIRMS

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It is a common phenomenon for businesses to establish connections with the governments all over the world. Previous studies have proved that the political connections at either individual level or organizational level will influence the survival and performance of enterprises. This chapter examines how relations between two countries affect the cross-border acquisitions performance of politically connected enterprises, based on the empirical study of 172 overseas acquisitions by Chinese listed companies from 2009 to 2017. The results show that there is a significant positive correlation between personal political connections and cross-border acquisitions performance; however, the relationship between organizational political connections and cross-border acquisitions performance is not significant. The results also show that organizational political connections as well as improvement in diplomatic relations reduce firms' dependence on personal political connections.

Keywords: cross-border acquisitions performance; personal political connection; organizational political connection; national diplomatic relations; resource dependence theory

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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
Chaebol Korean family-run conglomerate
CNCPC National Petroleum Corporation
DOI Degree of Internationalization
DRAM Dynamic Random Access Memor
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
FTAs Free Trade Agreements
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
GVCs Global Value Chains
HACCP Hazard Analysis and Critical Control Points
HCBM Human-Centered Business Model
HMETC Hyundai Motor Europe Technical Center
IB International Business
ICT Information & Communication Technology
IDB Inter-American Development Bank
IEA International Energy Agency
IMF International Monetary Fund
INST-OUT Outer institutions
KEPCO Korea Electric Power Corporation
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 Organization 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
SKMS SK Management System
SOE State-Owned Enterprise
SMEs Small and Medium-size Enterprises
STEM Science, Technology, Engineering & Mathematics
TPA Trade Promotion Authority
UN United Nations
UNCTAD United Nations Conference on Trade and Development
USMCA United States-Mexico-Canada trade agreement
VCR Video Cassette Recorders
WB World Bank
WCDMA Wide-Band Code Division Multiple Access
WEF World Economic Forum
WTO World Trade Organization

PART I
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Chapter 1

EMERGING MARKET MULTINATIONALS CONTINUE TO MOVE AHEAD UNDER UNCERTAINTY[1]

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Executive Summary

The past few years saw a trend of foreign disinvestment, impacting a substantial share of the global economy. The projected global recovery from the pandemic was slowed down by the Russia-Ukraine War, which has triggered another wave of sanctions after the US-China trade war. This chapter compares the performance of emerging market multinationals in this context. It documents the resilience of EMNCs during the crisis, especially the continued dominance of Chinese MNCs and the growth of energy companies from other emerging markets. By comparing developed and emerging markets, it also shows that while the U.S. still has the most profitable and efficient companies as well as the largest equity market, the gap between the U.S. and China is narrowing. The chapter also includes an examination of the top 500 largest companies from emerging markets, the top 500 EMNCs.

Keywords: Emerging Markets Multinationals, Foreign Direct Investment, Energy, Russia-Ukraine War

1.1. From Foreign Direct Investment to Foreign Direct Disinvestments: Politics rules business

As the economy recovered in 2021, faster than what many had forecasted, the year was a stellar one for companies that increased revenues and profits to record-ever highs (see Fortune Global 500, 2022). 2022 brought this to a sudden stop with the war in Ukraine: commodity prices skyrocketed, trade sanctions on Russia were imposed, and disinvestments followed. In a matter of weeks, western multinationals left Russia. Politics took priority over economics and business. As NATO Secretary Jens Stoltenvberg, said in the World Economic Forum Annual Meeting on May 24, 2022 'Freedom is more important than free trade. The protection of our values is more important than profit'. In 2022, the power of governments and their political decisions seem to reign more importance over the business world.

Trade sanctions and disinvestments are not new. The U.S. started imposing sanctions on Chinese companies in 2018 and China reacted by creating the conditions to become self-reliant with policies like 'Made in China 2025' and technological and financial decoupling (see Chapter 3). In both Europe and the U.S.A., governments have increased regulation, started greater scrutiny over international acquisitions and have protected their own business sector. From the Washington consensus era when deregulation, low taxes, and privatization were the name of the game, in 2022 governments' role in business has increased and we are moving to different forms of state capitalism. Since the beginning of the war in Ukraine, privatizations have been reversed in Europe: Germany nationalized natural gas company Uniper SE and France did the same with EDF. Italy had previously nationalized the airline Alitalia during the pandemic. At the same time, many governments recovered their 'golden shares' to block possible hostile takeovers.

It is early to explore the consequences of this new balance of power between governments, economic policies and business models. The consequences of this shift are going to be profound for Emerging Market Multinationals (EMNCs) which have a new dynamic to deal with in addition to the traditional uncertainties and low stabilities in their home markets. The Emerging Markets Report will continue to monitor these shifts and their impact on EMNCs. In this first chapter of the report, we will examine the state of the art of Emerging Market Multinationals where we see Chinese companies continuing to grow and expand in spite of the headwinds.

[1] The contribution of Daniel dos Anjos, principal researcher at EMI with data analytics and Xingqi Ye, Researcher at EMI, is gratefully acknowledged.

1.2. Chinese companies continue to dominate

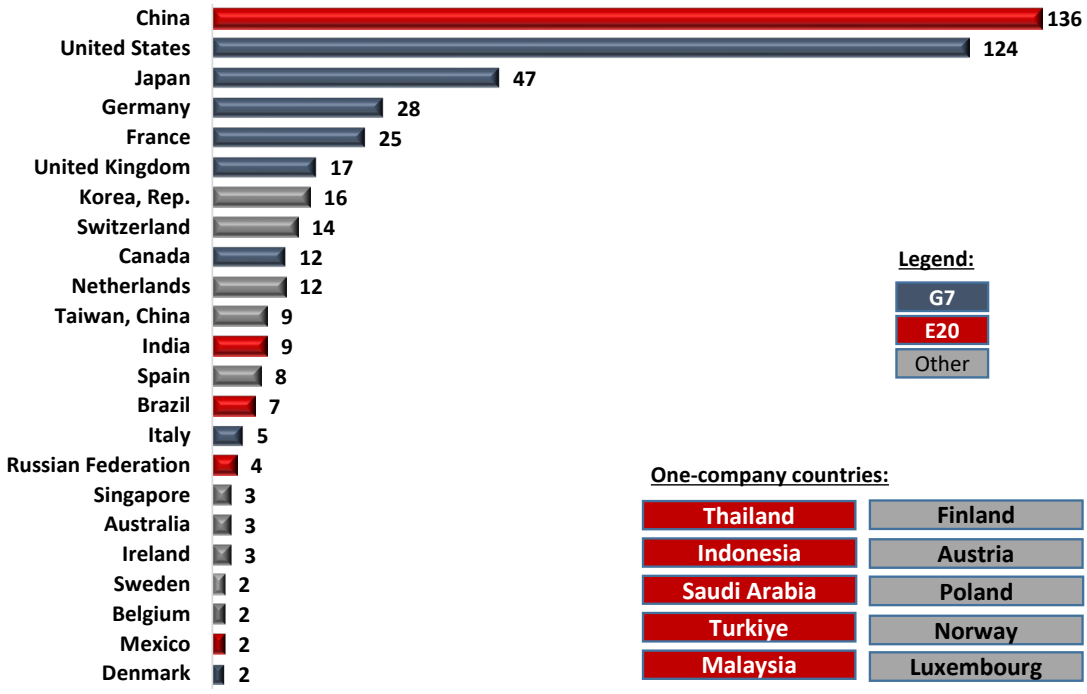
The Fortune Global 500 list was launched in its current form in 1995 and it lists companies by revenue and covers all companies including State-Owned Enterprises (SOEs) which are common in Emerging Markets. The data allows for a comparison among different countries and for a longitudinal benchmark by which we can evaluate changes over time. We observe a concentration of power in the last 10 years with the number of countries present in the list decreasing from 33 in 2010 to 31 in 2021. U.S. and China with 257 firms, more than half of the total dominate the list.

From a sectoral perspective, National Oil Companies (NOCs) (such as the Mexican Pemex, the Brazilian Petrobras and PTT PCL from Thailand) or mining companies (like the Chilean Codelco) are the dominant EMNCs in the Fortune 500 list. These NOCs companies are either fully State-owned (such as Pemex and Codelco) or have mixed ownership (part SOE and part public). These firms play an important role in their economies in terms of job creation, innovation and encouraging local entrepreneurial ecosystems. They are often used as revenue sources by governments with weak tax collection systems. NOCs also help their governments subsidize oil prices and keep inflation at bay. Private banks also make it to the top of EMNCs: Banco Itaú and Bradesco from Brazil and the Indian SOE ICICI bank are often found in this exclusive group.

As we review the list of the largest global companies as measured by self-reported annual revenues, its changing composition over the last years allows for a good overview of trends in the changing fortunes of global companies. American Walmart continues to lead the pack. The incumbent retailer is followed by a new one, Amazon, reaching number two for the first time and ahead of Chinese State-Owned energy company State Grid. A noticeable fact is the increase of oil (and energy) companies among the 10 biggest firms in the list (from three to four) including three Chinese firms (State Grid, China National Petroleum and Sinopec) and Saudi Aramco from Saudi Arabia.

As presented in Figure 1.1, China continued its dominance in the 2022 Fortune Global 500 list of the largest companies by sales. Since the inception of the ranking, the United States has traditionally been home to the greatest number of companies listed on the Fortune Global 500. But since 2020, China tops the list, and as of 2022, 136 out of 500 (27.2 percent) of the world's largest 500 companies are Chinese. The number would be even greater (about one third of the top 500 companies) if, as Fortune Global 500 did this year, one considers Taiwan as part of Greater China. Despite the fraying ties between Taiwan and mainland China because of increasing political tensions, many Taiwanese MNCs have a strong China connection. For instance, in 2022, the largest Taiwanese company by revenue was Hon Hai Precision Industry (global ranking: 20), a major supplier of Apple. The company had most of its operations on the mainland, employing over 1 million workers there (Nikkei Asia, 2022).

Figure 1.1. Number of companies in Fortune Global 500 per country, 2022.



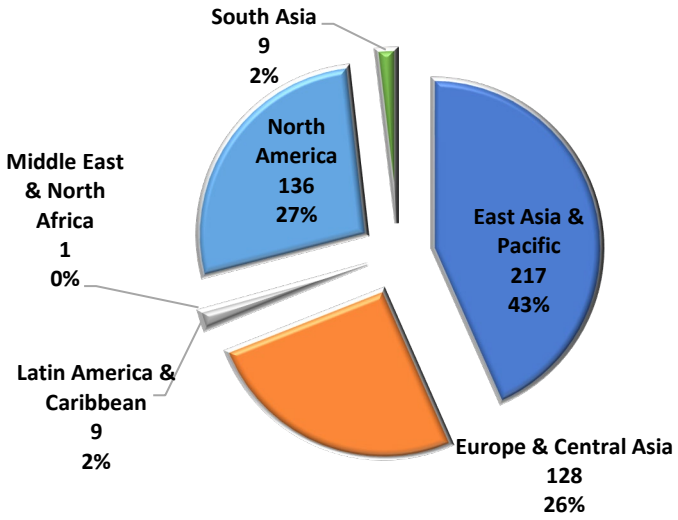
Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

Some other emerging market players are on the list. A comparison between Figure 1.1 and last year's chart (Casanova & Miroux 2021) suggests that China and the E20 combined have increased their presence by about 1 percentage point from last year (see Chapter 2). Together, three more companies from E20 countries (excluding China, see chapter 2) entered the top 500 list. Besides

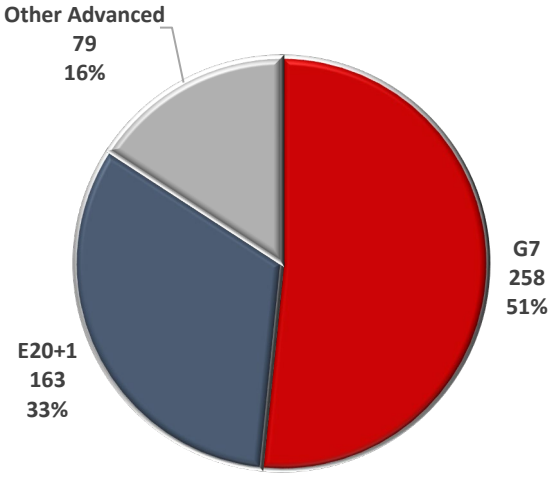
China, there are 9 other emerging countries that have at least one company on the list. Accordingly, the presence of G7 has seen a reduction from 268 in 2021 to 258 in 2022.

Figure 1.2. Number of companies in Fortune Global 500 per region (A) and a comparison of G7, E20+1 and the rest of advanced economies (B), 2022

A)



B)



Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

Table 1.1. Countries with more than one company in Fortune Global 500, 2022: Number of companies, Revenues, Profits, Employees, and Assets

Country	Number of companies	Total Revenues (M. USD)	Total Profits (M. USD)	Total Employees	Total Assets (M. USD)
China	136	11,012,708	560,986	22,390,133	48,753,365
United States	124	11,217,289	1,246,296	18,718,398	38,606,823
Japan	47	2,998,556	167,281	5,518,271	15,938,503
Germany	28	2,095,871	123,041	4,883,270	7,000,415
France	25	1,632,027	121,319	3,820,258	12,771,840
United Kingdom	17	993,520	105,191	1,470,443	9,053,933
Korea, Rep.	16	998,173	68,691	997,180	2,336,818
Switzerland	14	810,731	94,192	1,188,080	3,509,313
Canada	12	527,662	57,026	1,049,061	5,705,660
Netherlands	12	947,224	65,616	1,492,894	2,643,753
Taiwan, China	9	532,031	37,730	1,423,398	1,190,709
India	9	541,571	28,496	919,693	1,705,243
Spain	8	364,573	40,492	837,081	3,003,155
Brazil	7	344,778	59,371	661,859	1,335,457
Italy	5	397,234	20,833	390,256	2,597,660
Russian Federation	4	400,976	67,858	1,214,290	1,221,043
Singapore	3	332,089	5,501	171,579	172,570
Australia	3	140,083	13,602	364,545	151,918
Ireland	3	111,631	12,078	791,400	180,929
Sweden	2	74,337	30,407	104,007	144,883
Belgium	2	82,954	5,402	180,389	227,911
Mexico	2	123,463	-5,036	305,047	182,891
Denmark	2	90,775	19,724	163,333	96,949

Obs.: In red, E20+1, in blue, G7.

Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

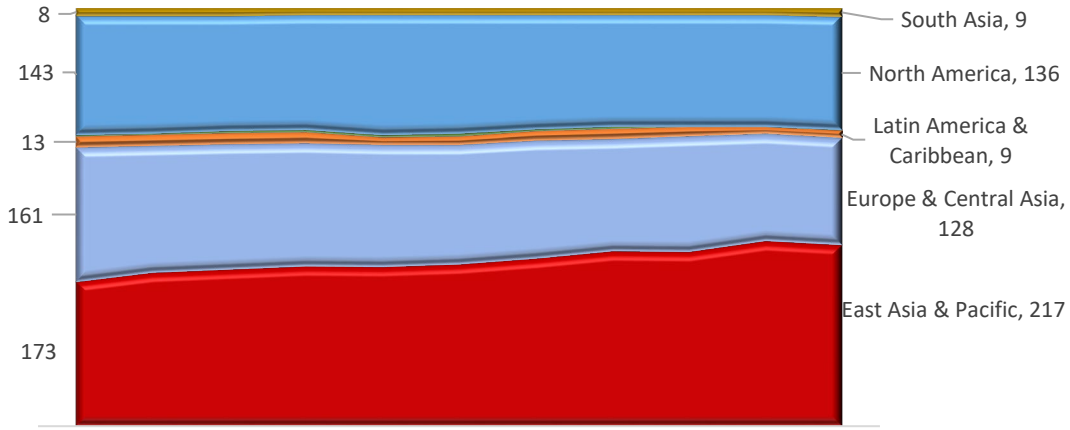
While outnumbered by Chinese firms in Fortune 500, large U.S. companies have maintained their top position in terms of both total revenue and total profits (Table 1.1). As discussed in prior editions of the Emerging Markets Report, Chinese companies underperform their U.S. rivals on these dimensions. Pairwise comparisons at an individual company level allow us to better articulate the gap. For instance, e-retailer Amazon earned USD469.8 billion in 2021, higher than the total sales of its two largest emerging market counterparts—JD.com and Alibaba—combined (USD 149.2 billion + USD 109.5 billion= USD 258.7 billion). However, the revenue gap is narrowing. Last year, the total revenue of the top 500 companies headquartered in China was 92

percent of those in the U.S.; while this year, the figure grew to 98 percent, making China almost at par with the U.S. The rest of the table has remained relatively constant over the past year. No significant changes are seen for India, Brazil, Russia, and Mexico.

A closer look at the data suggests that the growth of China is explained by the fall of the U.S. from 139 in 2010 to 124 companies this year (Figure 1.4). Representation from other countries, mainly Japan has also decreased significantly. From 2010 to 2022, the number of Japanese companies listed on the Fortune 500 shrank by over one-third (from 71 to 47). France, Germany, and mainly the UK also experienced significant declines (Figure 1.3).

The story would not be much different if we are talking about "Greater China", which already has a larger sum of revenue than the U.S. But the inclusion (or exclusion) of Taiwan has little impact on the long-term trend, as Taiwan's position on the table has remained relatively stable over the past few years, and the growth in the revenues of Chinese firms comes largely from the mainland.

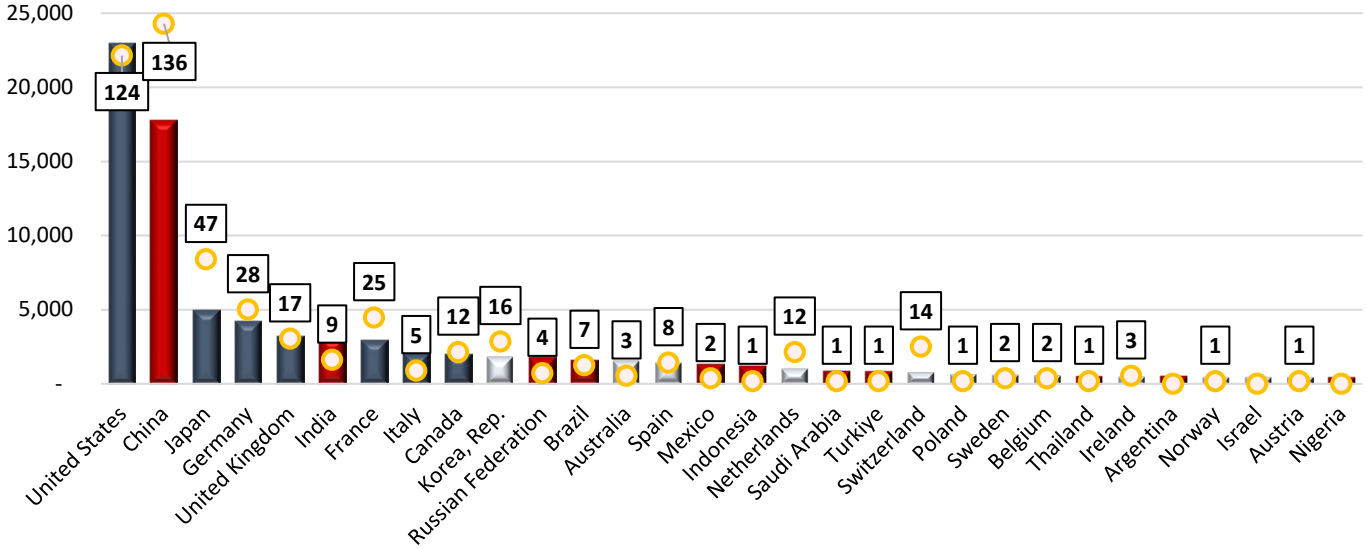
Figure 1.3. Number of companies in Fortune Global 500 per region since 2012.



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
South Asia	8	8	8	7	7	7	7	7	7	7	9
North America	143	141	138	138	144	142	137	134	134	134	136
Middle East & North Africa	2	2	3	3	3	4	3	3	1	1	1
Latin America & Caribbean	13	13	13	13	9	10	11	12	11	8	9
Europe & Central Asia	161	152	150	147	146	143	141	134	138	128	128
East Asia & Pacific	173	184	188	192	191	194	201	210	209	222	217

Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

Figure 1.4. 30 Biggest countries by nominal GDP (bars) and number of companies (circle marks) in Fortune Global 500.

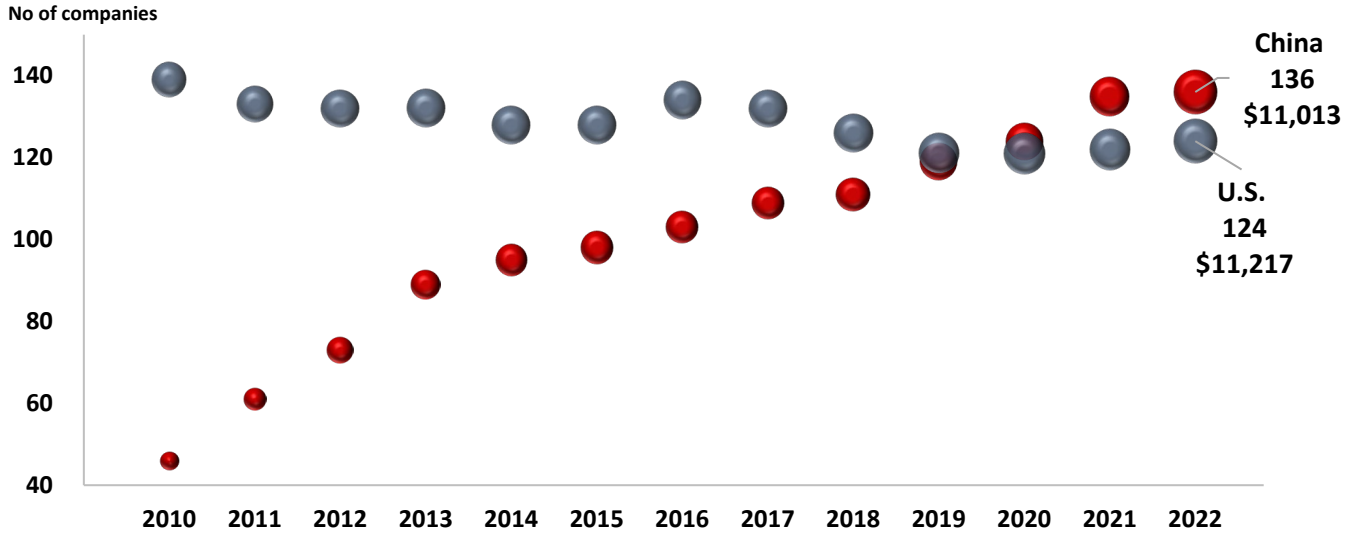


Source: EMI research team based on Fortune (https://fortune.com/) and World Bank (https://data.worldbank.org/), data accessed in August 2021.

Corporate performance is linked to the size of its home country's economy: Gross Domestic Product (GDP) and the GDP per capita. In last year's report (Casanova & Miroux, 2021 and Figure 1.4), we used regression analysis to show a statistically

significant association between GDP and the number of companies on the Fortune 500 list, indicating that large countries are the main producers of big companies. Because the market is forward-looking, the expected growth of the economy may also be included as a predictor of future corporate performance.

Figure 1.5. Number of companies in Fortune Global 500 since 2010: the U.S. versus China.

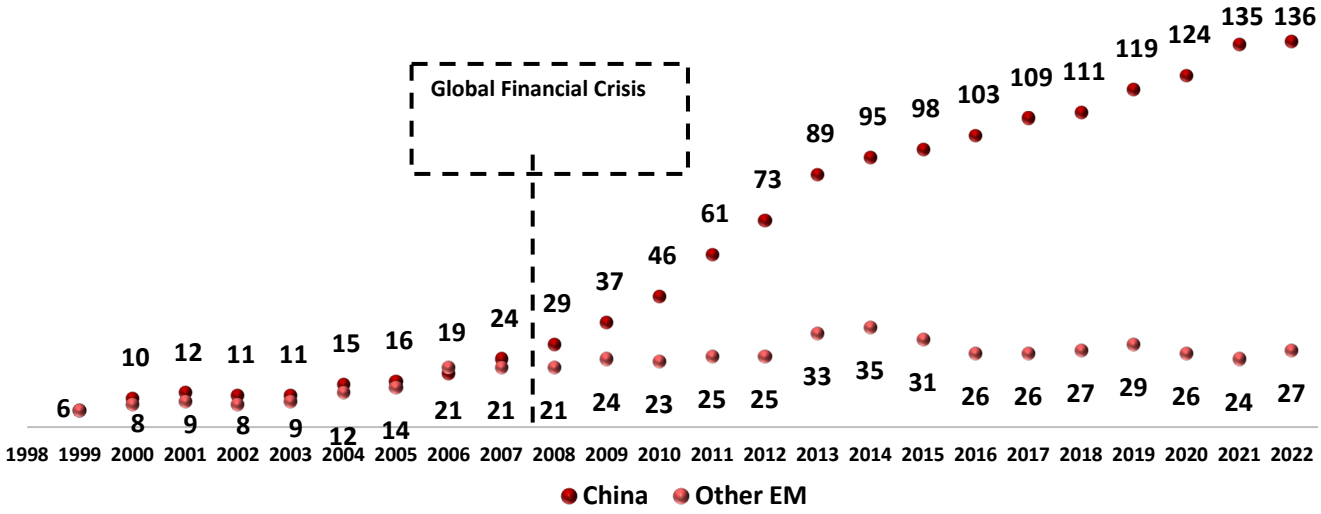


Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

1.3. Chinese companies startling growth

After the Global Financial Crisis of 2008, China started to diverge from the rest of the EMs (Figure 1.6). In 1999, China had the same number of Fortune 500 companies as the sum of other emerging markets. Both grew at a relatively constant speed until 2008, when China clearly separated from the rest. Rapid economic growth brought 3.5 times more Chinese companies to the top 500 list in less than 15 years. On the other hand, the number of companies from all other emerging markets combined (including Brazil, India, Russia, and Mexico) has been steady at around 25 (+/- 5) since 2010.

Figure 1.6. Number of companies in Fortune Global 500 since 1999: China and other emerging countries.



Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

While other emerging markets have not exhibited comparable levels of growth as China, their rise should not be ignored. 2022 was the first year when the number of companies from E20 countries (excluding China) grew by a larger number than that of companies from China (3 vs. 1) since 2006 (7 vs. 3).

Table 1.2. Biggest 20 EMNCs in Fortune Global 500, 2022

Company	Country	Sector	Rank	Change in Rank	Revenue (USD M)	Profits (USD M)	Employees	Assets (USD M)
State Grid Corporation of China	China	Energy	3	-1	460,617	7,138	871,145	735,430
China National Petroleum	China	Energy	4	0	411,693	9,638	1,090,345	660,008
Sinopec Group	China	Energy	5	0	401,314	8,316	542,286	380,675
Saudi Aramco	Saudi Arabia	Energy	6	8	400,399	105,369	68,493	576,134
China State Construction Engineering	China	Engineering & Construction	9	4	293,712	4,444	368,327	378,352
Industrial & Commercial Bank of China	China	Financials	22	-2	209,000	54,003	434,089	5,536,969
China Construction Bank	China	Financials	24	1	200,434	46,899	375,531	4,762,831
Ping An Insurance	China	Financials	25	-9	199,629	15,754	355,982	1,596,641
Agricultural Bank of China	China	Financials	28	1	181,412	37,391	455,174	4,576,306
Sinochem Holdings	China	Chemicals	31	-	172,260	-198	220,760	241,750
China Railway Engineering Group	China	Engineering & Construction	34	1	166,452	1,853	310,817	215,913
China Railway Construction	China	Engineering & Construction	39	3	158,203	1,704	366,833	213,452
China Life Insurance	China	Financials	40	-8	157,095	3,087	182,646	903,090
Bank of China	China	Financials	42	-3	152,409	33,573	306,322	4,206,862
China Baowu Steel Group	China	Materials	44	28	150,730	2,995	230,884	175,861
JD.com	China	Retailing	46	13	147,526	-552	385,357	78,164
Gazprom	Russian Federation	Energy	52	32	137,732	28,405	468,000	360,802
Alibaba Group Holding	China	Retailing	55	8	132,936	9,701	254,941	267,467
China Mobile Communications	China	Telecommunications	57	-1	131,913	14,629	451,331	337,923
China Minmetals	China	Materials	58	7	131,800	617	193,965	158,044

Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

Two major changes occurred in the list of 20 largest EMNCs from 2021 to 2022 (Table 1.2). First, the telecom giant Huawei, falling by 52 places (from 44th to 96th) on Fortune 500, left this table. It is worth noting, however, that while the company saw a 29 percent revenue slide during the year, its profits grew by 76 percent. As the company continued to deal with external uncertainties including the impact of the U.S. ban on its chip-making business, it has made a shift in its business strategy toward higher profitability, as manifested by its growing presence in the high-end smartphone market.

The list also become slightly more diversified. The Russian state-owned energy company Gazprom rose by 32 places on the Fortune 500 list, making it the second non-China EMNC in the top 20. Recently, the company also announced a record-high first-half profit (Smith, 2022). Future analyses will track the performance of Gazprom in the context of Russia-West relations, especially after its recent decisions to suspend gas supplies to major European countries.

1.4. Energy and National Oil Companies dominate EMNCs

Table 1.3. Non-China EMNCs in Fortune Global 500, 2022

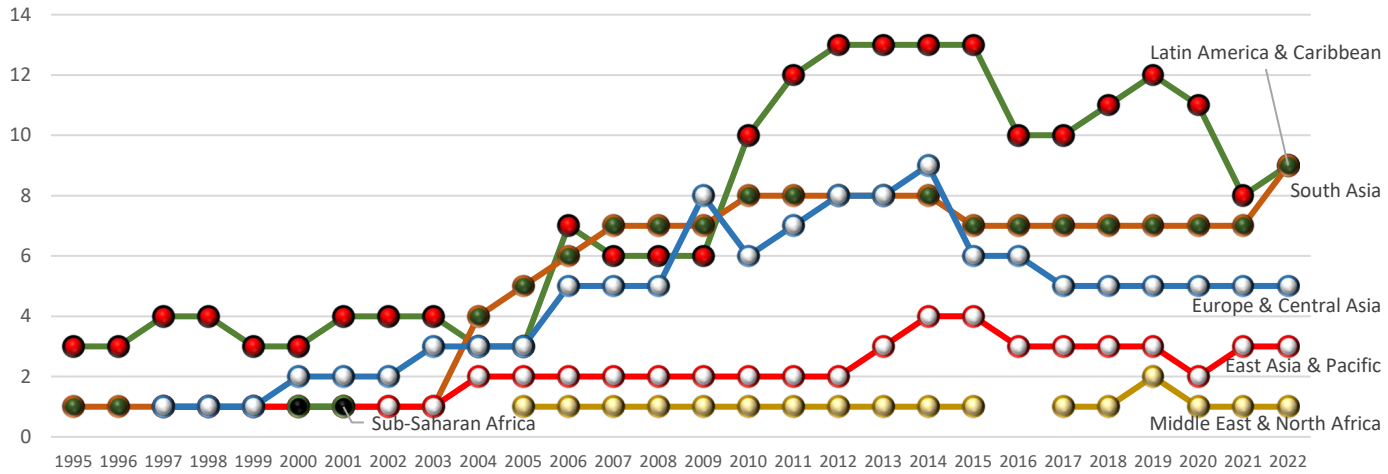
Company	Country	Sector	Rank	Change in Rank	Revenue (USD M)	Profits (USD M)	Employees	Assets (USD M)
Saudi Aramco	Saudi Arabia	Energy	6	8	400,399	105,369	68,493	576,134
Gazprom	Russian Federation	Energy	52	32	137,732	28,405	468,000	360,802
Lukoil	Russian Federation	Energy	67	58	125,135	10,496	102,424	91,574
Life Insurance Corp. of India	India	Financials	98	-	97,267	554	105,738	560,682
Reliance Industries	India	Energy	104	51	93,982	8,151	342,982	197,655
Rosneft Oil	Russian Federation	Energy	118	77	87,832	11,983	356,000	219,532
Petrobras	Brazil	Energy	128	53	83,966	19,875	45,532	174,348
Indian Oil	India	Energy	142	70	79,542	3,370	32,938	54,120
Pemex	Mexico	Energy	166	91	73,761	-14,526	123,842	100,303
PTT	Thailand	Energy	177	29	70,652	3,389	29,765	92,767
Oil & Natural Gas	India	Energy	190	53	65,962	6,112	38,252	77,162
JBS	Brazil	Food, Beverages & Tobacco	194	8	65,036	3,799	250,000	37,181
Petronas	Malaysia	Energy	216	61	59,874	10,091	46,884	152,499
Pertamina	Indonesia	Energy	223	64	57,509	2,046	34,183	78,051
Vale	Brazil	Energy	231	63	55,585	22,445	72,266	89,442
State Bank of India	India	Financials	236	-31	54,643	4,750	244,250	706,560
Sberbank	Russian Federation	Financials	270	-1	50,278	16,973	287,866	549,136
America Movil	Mexico	Telecommunications	275	-38	49,702	9,490	181,205	82,588
Bharat Petroleum	India	Energy	295	99	46,867	1,568	9,193	24,716
Itaú Unibanco Holding	Brazil	Financials	333	-11	41,175	4,963	99,598	371,471
Koç Holding	Turkiye	Energy	357	110	39,014	1,710	105,908	77,018
Tata Motors	India	Motor Vehicles & Parts	370	-13	37,797	-1,536	73,608	43,575
Raízen	Brazil	Energy	398	-	35,858	590	30,359	21,234
Tata Steel	India	Materials	435	-	32,861	5,391	72,551	37,622
Rajesh Exports	India	Wholesalers	437	-89	32,650	135	181	3,152
Banco Bradesco	Brazil	Financials	439	-13	32,556	4,297	79,507	300,805
Banco do Brasil	Brazil	Financials	465	17	30,602	3,402	84,597	340,976

Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

Saudi Aramco continued to lead the list of non-China EMNCs (Table 1.3). As the Russia-Ukraine war drove up energy prices, the world's largest oil company achieved a record-high quarterly profit of USD48 billion, making the company the most profitable in

the world. As of September 2022, the company had USD 279.4 billion in profits in the previous 12 months (Makortoff, 2022). In addition to enjoying rising demand from the West, the company maintained low extraction costs thanks to the readily extractable nature of its oil reserves. All energy companies on the list—from Saudi Arabia, Russia, India, Thailand, Brazil, Turkey, and Malaysia—saw a significant rise in their ranking, while most financial firms, telecommunication suppliers, and wholesalers moved down.

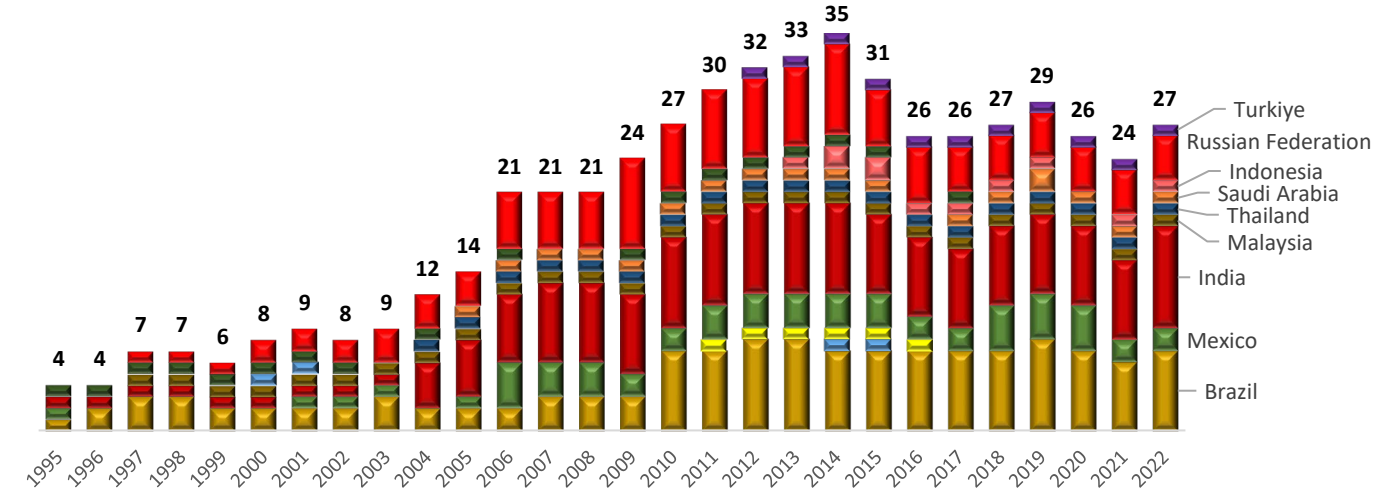
Figure 1.7. Number of EMNCs in Fortune Global 500 per region of E20 countries (excluding China) since 1995



Source: EMI research team based on Fortune (https://fortune.com/) and CNN Money (https://money.cnn.com/magazines/fortune/global500/), data accessed in August 2022.

Latin American and Caribbean companies, especially Brazilian and Mexican multinationals (as shown in Figure 1.7 and Figure 1.8), surpassed in numbers EMNCs from South Asia and Europe & Central Asia (except China) in the early 2010s and stayed ahead for nearly a decade. However, due to their low economic growth, they experienced a major plunge (from 2019 to 2021) and in parallel, South Asia caught up with the region based on steady strong growth in the region.

Figure 1.8. Number of EMNCs in Fortune Global 500 per country (excluding China) since 1995



Source: EMI research team based on Fortune (https://fortune.com/), CNN Money (https://money.cnn.com/magazines/fortune/global500/), both accessed in August 2022.

1.5. EMNCs dominate the Energy Sector

Among the 21 sectors on Fortune Global 500 (Table 1.4), four dominate (even for developed markets): Energy, Materials, Engineering & Construction, and Aerospace & Defense. A breakdown by countries in Table 1.4 suggests that while the energy sector has a relatively diverse mix of EMNC players, the emerging market presence in the three other sectors is mainly driven by Chinese companies. EMNCs also share the top with G7 in Industrials and Chemical sectors.

E20+1 firms still lag in many sectors, including Health Care, Food & Drug Stores, and Retailing. Although according to the World Bank (2021), the services sector in developing economies is growing at a faster pace than manufacturing, the gap is still large. Services can offer EMNCs opportunities that manufacturing cannot offer, such as a lower requirement for upfront capital

investment, lower fixed costs, and greater adaptability to changing tastes. But the expansion of the services sector typically requires the adoption of new technologies, upgrade of labor skills, infrastructure development, as well as a growing domestic market. As noted by the United Nations, countries "cannot export a taxi ride" (Gay, 2021). Lower tradability combined with relatively low purchasing power in their domestic markets are among the key obstacles for the E20+1 to work their way up the services sector ranks.

Table 1.4. Number of companies in Fortune Global 500 per sector, 2022.

	Sector	Companies	Average of Revenue (USD Million)	E20+1	G7	Other
1	Financials	111	66,182	30%	**56%**	14%
2	Energy	77	95,256	**44%**	39%	17%
3	Technology	35	85,099	14%	**57%**	29%
4	Motor Vehicles & Parts	33	87,185	27%	**58%**	15%
5	Materials	32	54,768	**69%**	19%	13%
6	Health Care	32	92,928	13%	**78%**	9%
7	Wholesalers	25	68,784	36%	**52%**	12%
8	Transportation	20	58,395	35%	**50%**	15%
9	Food & Drug Stores	18	61,715	0%	**61%**	39%
10	Retailing	17	134,152	18%	**71%**	12%
11	Food, Beverages & Tobacco	17	51,264	12%	**59%**	29%
12	Industrials	17	49,270	47%	47%	6%
13	Engineering & Construction	16	84,274	**75%**	19%	6%
14	Telecommunications	15	85,130	27%	**67%**	7%
15	Chemicals	13	57,052	38%	38%	23%
16	Aerospace & Defense	12	56,228	**50%**	42%	8%
17	Household Products	3	58,766	0%	**100%**	0%
18	Media	3	42,232	0%	**100%**	0%
19	Apparel	2	60,231	0%	**100%**	0%
20	Business Services	1	29,127	0%	0%	100%
21	Hotels, Restaurants & Leisure	1	29,061	0%	**100%**	0%

Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

Appendix 1 helps us to identify the sectors where E20+1 countries have achieved the greatest growth. From 2010 to 2022, six sectors saw their first Fortune 500 member with an E20 origin—Financials, Technology, Industrials, Motor Vehicles and Parts, Transportation, and Food, Beverage & Tobacco. More significantly, the tables for Financials and Industrials are dominated now by Chinese companies. Materials and Engineering & Construction are sectors where Chinese companies have traditionally led, but the increase in dominance has been significant—in 2010, 30 percent of companies in the Materials chart were Chinese, while in 2022, their share rose to 70 percent. Similarly, in 2010, 40% of companies in the Engineering & Construction chart were from China, while in 2022, their share went to 80 percent. Larger and fast-growing domestic markets for construction, manufacturing, and chemicals as well as the growing influence of China on other developing economies have contributed to the growth.

Two EMNCs attract special attention. Huawei and Tencent are the only emerging market company listed in the top 11 companies in the technology sector. The "zero-to-one" change represents an exemplary effort in emerging markets to move toward innovation-driven technology development. Although the presence is increasing, Technology, Food, and Beverages is the only sector where China does not lead the game. Brazil's meat processing firm JBS utilized the advantages of Brazil's natural resources—farmland availability, abundant feedstuffs supplies, and low trade barriers (Somwaru & Valdes, 2004) – as well as aggressive acquisitions in the U.S. to become the largest meat processor, and one of the world's largest food companies.

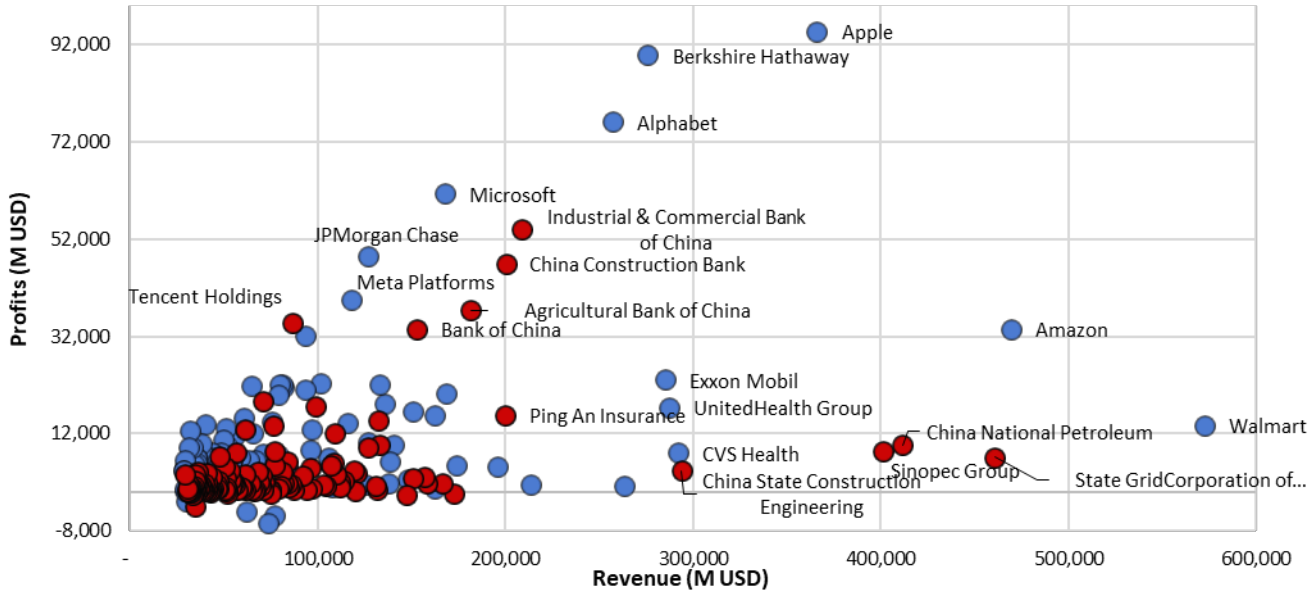
In addition, the growth in retailing is also worth mentioning. In 2021, the only non-G7 company on the top 10 Retailer list was Hutchison Whampoa, a Hong Kong-based investment holding company with a large portfolio of real estate interests. (It is arguable whether Hutchison Whampoa should be categorized as a retail company.) On the other hand, mainland-based JD.com and Alibaba might be more representative of emerging market players. Technology companies by nature, their growing presence also offers a textbook case for how digital innovation drives the growth of EMNCs. Currently, both companies, especially Alibaba, are facing major challenges with increased regulatory burden and changing market forces, including weakening consumer demand associated with the economic environment and strict public health policies concerning COVID-19.

1.6. U.S. companies dominate in profits and efficiency

While dominating the list of largest companies by revenue, Chinese EMNCs underperform their U.S. rivals in terms of profits. As shown in Figure 1.9, for companies in the same sector and with comparable revenues, U.S. companies are in general more profitable than their Chinese peers. The large presence of state-owned companies (common in developing markets) and the need to cater to a domestic market with relatively low purchasing power are the major obstacles to achieving better efficiency

and profitability. However, in recent years, a stronger domestic economy, growing interest in high-tech development, and gains in global brand recognition are moving some Chinese MNCs to high-margin territories.

Figure 1.9. Profits versus Revenue of U.S. (blue) and Chinese companies (red) in Fortune Global 500, 2022



Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

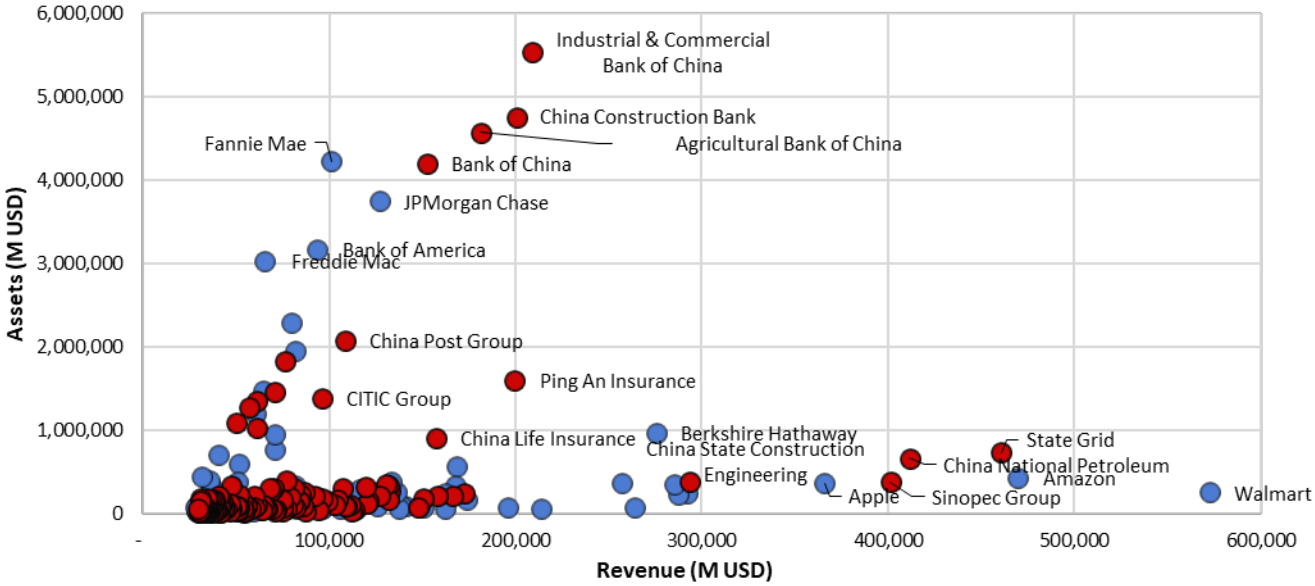
The only exception in the U.S.-China comparison is banking. Chinese banks have been among the most profitable in the world for many years. However, a slower growth rate is expected in the future with macro headwinds (Wu & Lozano, 2022). Chinese banks' profitability (Ding *et al*., 2017) has consistently benefited from real estate loans and government support as they are SOEs or mixed ownership SOEs and public. In the past three years, widespread COVID-19 lockdowns and an economic slowdown have led to regional declines in housing prices, halted construction projects, and caused significant increases in bad debts (Tang *at al*., 2022) Looking into the future, the effect of the ongoing property sector crisis in China may manifest itself in the financial performance of Chinese banks.

China has the world's largest banking system—characterized by a high degree of centralization and a predominantly state-owned or mixed ownership status. This explains why Chinese banks stand out in Figure 1.9 with such a large volume of assets. The "big four" Chinese banks—Industrial & Commercial Bank of China (ICBC), China Construction Bank, Agricultural Bank of China, and Bank of China—are also the largest four banks globally. They collectively control most assets in the country. ICBC is the world's largest bank in terms of tier 1 capital, with total assets exceeding USD5.5 trillion in 2021, 37.5% larger than that of JPMorgan, the biggest American bank.

Brazilian banks are among the most profitable in the world. In their case, the reason is that Brazilian banks own 27% of the government debt in an environment where interest rates (as of September 2022) are at 13.75% while inflation is at 8.7%. This mismatch works to the bank's advantage. Itaú Unibanco Holding SA, the largest bank in Latin America by assets had an average return on equity of 16.8% in 2021. Brazil's sovereign debt is rated as non-investment grade and the financial sector has adjusted well to this environment of high risk and high returns.

Regarding assets versus revenues, U.S. companies significantly outperform Chinese companies in certain sectors including technology, indicating that Chinese EMNCs are not as efficient as their U.S. competitors in using their large asset bases to generate sales. Common solutions include efficiency improvement and sales growth—e.g., through faster international expansion.

Figure 1.10. Assets versus Revenue of U.S. (blue) and Chinese (red) companies in Fortune Global 500, 2022

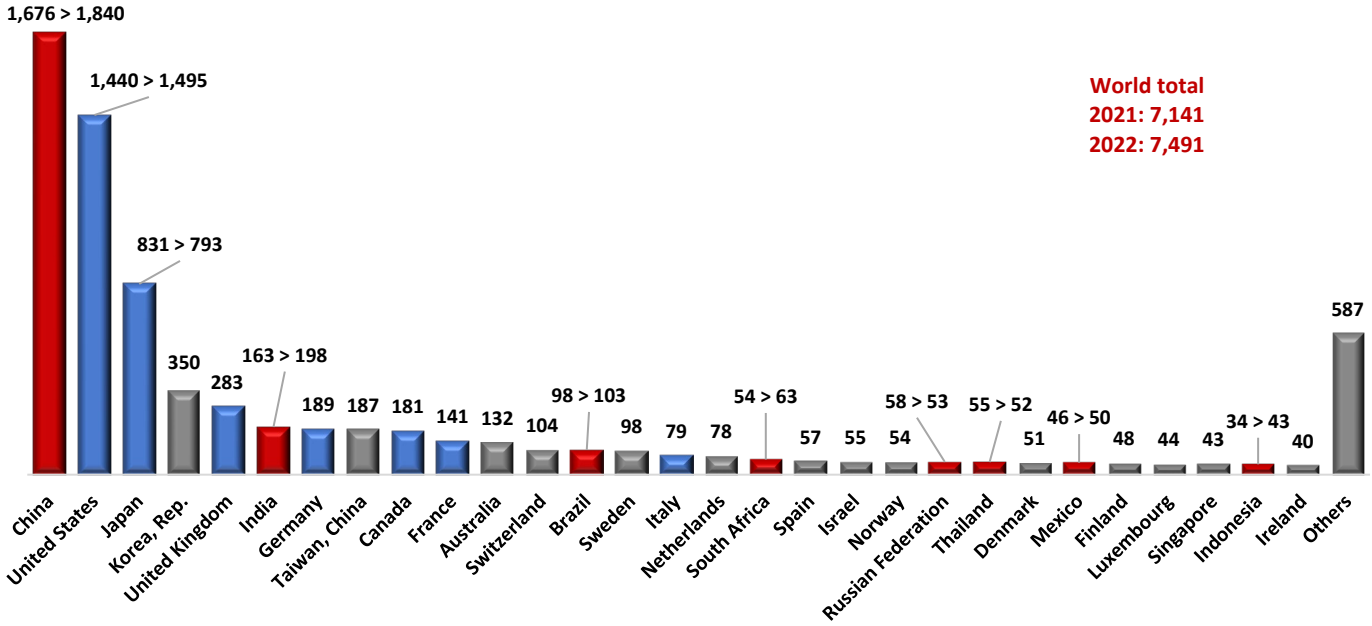


Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

1.7. The world's billionaire firms: China dominates the 'billionaire' club

As we wanted to expand the analysis of the biggest companies by revenues, the 2021 Emerging Markets Report (Casanova and Miroux 2021) introduced the world's billionaire firms as defined by those with more than USD1 billion in revenues according to data from Standard & Poor's Capital IQ[2]. As of 2022, and after cleaning the data (see footnote) there are 7,491 billionaire companies in the world. East Asia and Pacific topped the list with 3,551 companies (47% of all billionaires), followed by North America (1,701, 23%) and Europe and Central Asia (1,540, 21%). China was the main driver of East Asia and Pacific's dominance—over half (52%) of billionaire companies from this region were Chinese (Figure 1.11). While the total number of billionaire companies grew by 4.9%, 9.8% more Chinese companies entered the list, increasing China's representation from 23% to 25%. Chinese firms also make up 68% of the total number of billionaire EMNCs (Figure 1.11 and Figure 1.12 and Table 1.5 and Table 1.6).

Figure 1.11. Number of billionaire companies by country, 2021 and 2022



Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022.

[2] From all the billionaire firms in S&P's Capital IQ, we selected those who announced results in the last twelve months and discarded the rest.

Although G7 still has more billionaire firms than E20+1, the gap is getting smaller. While all G7 countries saw a growth of 37 companies in the number of billionaire companies last year, E20+1 countries increased their representation in 227 companies. Combined, E20+1 MNCs made up 35% of all billionaire companies. Besides China, India was another bright spot, being the second emerging market player in the top 10 countries in terms of the number of billionaire companies. As discussed in last year's report, South Africa has more billionaire companies than several countries with greater Fortune 500 presence.

Table 1.5. Number of billionaire companies by country (E20 +1 countries) and percentage in the world, 2022

Country	Category	Billionaires	% World
China	E20+1	1,840	25.1%
India	E20+1	198	2.8%
Brazil	E20+1	103	1.5%
South Africa	E20+1	63	0.7%
Russian Federation	E20+1	53	0.7%
Thailand	E20+1	52	0.7%
Mexico	E20+1	50	0.7%
Indonesia	E20+1	43	0.6%
Malaysia	E20+1	40	0.5%
Turkiye	E20+1	36	0.5%
Saudi Arabia	E20+1	34	0.5%
Philippines	E20+1	32	0.4%
Chile	E20+1	32	0.4%
Vietnam	E20+1	21	0.3%
Argentina	E20+1	15	0.2%
Colombia	E20+1	14	0.2%
Peru	Other Emerging	12	0.2%
Egypt, Arab Rep.	E20+1	9	0.1%
Pakistan	E20+1	8	0.1%
Nigeria	E20+1	7	0.1%
Others	-	54	0.7%
Total Emerging	**-**	**2,716**	**36.3%**

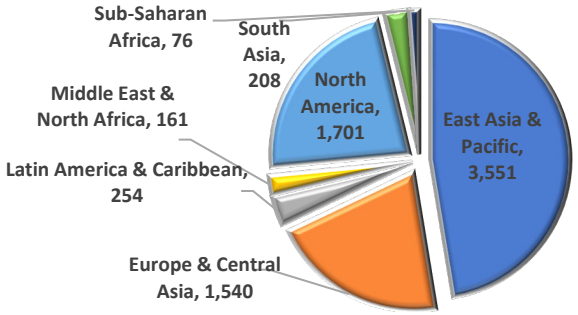
Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022

Table 1.6. Number of billionaire companies and percentage in the world, by category, 2022

Category	Billionaire	% World
Advanced economies	4,730	63.1%
E20+1	2,656	35.5%
Other Emerging	60	0.8%
Other	45	0.6%
Total	**7,491**	**100%**

Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022

Figure 1.12. Number of billionaire companies by region, 2022



Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022

1.8. The top 500 billionaire EMNCs

From the billionaire companies list, we present the 500 largest EMNCs companies by revenue. The EMNC 500 ranking allows us to compare countries that were not represented on Fortune's list. Compared to 2021, China's dominance reduced from 75.6% to 72.6%. India, Brazil, Mexico, and Chile increased their representation. Companies that contributed to the increased presence of these non-Chinese players in the emerging world were mostly energy and oil companies.

Colombia, Vietnam, and Pakistan joined the billionaire EMNC rank for the first time, each represented by a single company, their National Oil companies, namely Colombia's Ecopetrol S.A., Vietnam's National Petroleum Group, and Pakistan's State Oil Company. Again, unsurprisingly, all three companies that drive the greater geographical diversity of the top500 EMNC list were energy companies. Iran, Egypt, and Nigeria were the only three E20+1 countries that did not appear on the list.

Industrials companies made up the largest proportion of top500 EMNCs, followed by materials and financials. The services sector is still much less represented than the manufacturing sector.

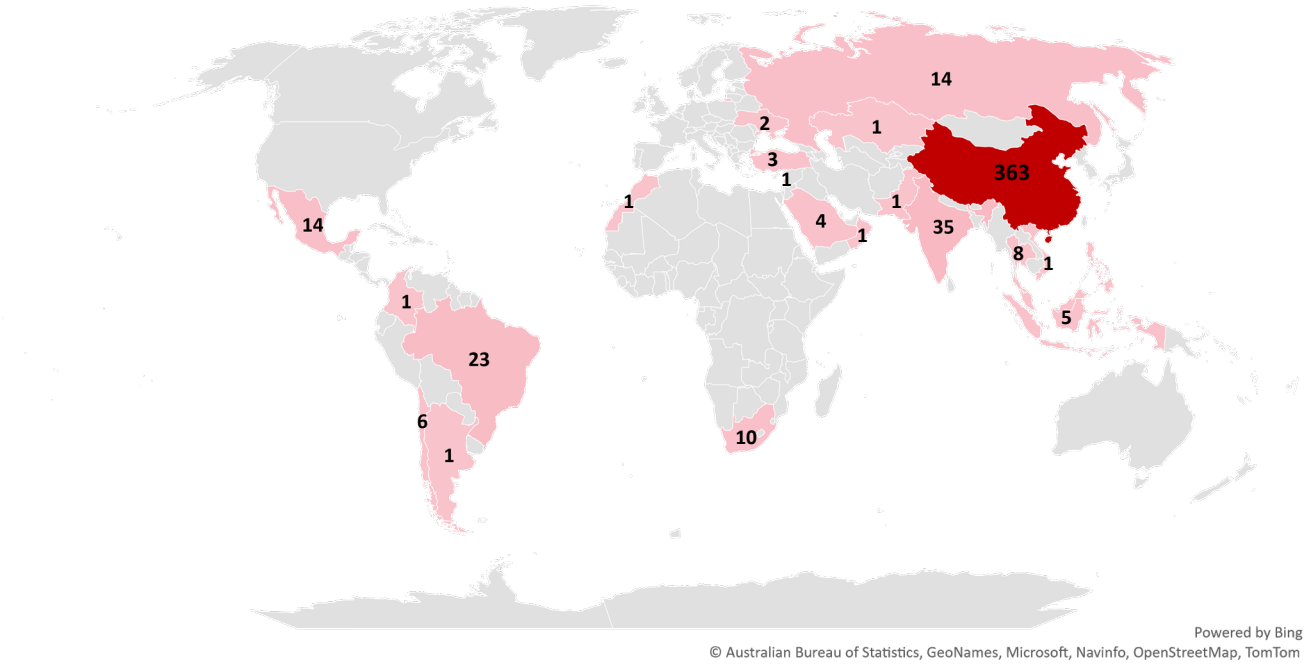
Table 1.7. Top 500 companies from Emerging Markets by sectors, 2022

Sector	Number of EMNCs
Industrials	108
Materials	87
Financials	58
Consumer Discretionary	53
Energy	47
Consumer Staples	39
Real Estate	33
Information Technology	27
Utilities	25
Communication Services	15
Health Care	8

Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022

From the Top 500 EMNCs revealed by Capital IQ data, we were also able to construct a Top500 EMNC list without China to capture the presence of the rest of E20 countries (https://datastudio.google.com/reporting/1e88860c-703e-4db3-823e-1673bd7bcf6b/page/p_t6flm055rc?s=knLxGVwHCZA). India has a leading position (after China) well ahead of Brazil and Russia.

Figure 1.13. 500 top billionaire EMNCs per country (by revenues June 2022)



Source: EMI research team based on S&P Capital IQ https://www.capitaliq.com/, accessed July 2022

Table 1.8. Twenty biggest billionaire EMNCs from Latin America & Caribbean (by revenues), 2022

Rank	Company	Country	Sector
1	Petróleo Brasileiro S.A. - Petrobras	Brazil	Energy
2	Petróleos Mexicanos S.A. de C.V.	Mexico	Energy
3	JBS S.A.	Brazil	Consumer Staples
4	Vale S.A.	Brazil	Materials
5	América Móvil, S.A.B. de C.V.	Mexico	Communication Services
6	Raízen S.A.	Brazil	Energy
7	Comisión Federal de Electricidad	Mexico	Utilities
8	Fomento Económico Mexicano, S.A.B. de C.V.	Mexico	Consumer Staples
9	Inversiones Angelini Y Compania Limitada	Chile	Information Technology
10	Vibra Energia S.A.	Brazil	Consumer Discretionary
11	Ecopetrol S.A.	Colombia	Energy
12	Corporación Nacional del Cobre de Chile	Chile	Materials
13	Itaúsa S.A.	Brazil	Financials
14	Ultrapar Participações S.A.	Brazil	Energy
15	Braskem S.A.	Brazil	Materials
16	Grupo Bimbo, S.A.B. de C.V.	Mexico	Consumer Staples
17	Banco Bradesco S.A.	Brazil	Financials
18	Copersucar S.A.	Brazil	Consumer Staples
19	Marfrig Global Foods S.A.	Brazil	Consumer Staples
20	Alfa, S. A. B. de C. V.	Mexico	Industrials

Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022

Brazil and Mexico, as in the previous years, dominated the list of the top 20 Latin American companies by revenue (Table 1.8). The increase in oil prices since 2020 has kept the lead of National Oil companies like Brazil's Petrobras (up from 4th position in 2021 to 1st) and the only Colombian company, oil company Ecopetrol, went up from the 17th to the 11th. The representation of financial services companies increased from 1 to 2, with Brazil's largest bank Itaú Unibanco moving up from 18th to 13th and another Brazilian bank, Banco Bradesco, appearing on the list for the first time.

Table 1.9. Twenty biggest billionaire EMNCs from India (by revenues), 2022

Rank	Company	Country	Sector
1	Reliance Industries Limited	India	Energy
2	Indian Oil Corporation Limited	India	Energy
3	Oil and Natural Gas Corporation Limited	India	Energy
4	Bharat Petroleum Corporation Limited	India	Energy
5	Tata Motors Limited	India	Consumer Discretionary
6	Rajesh Exports Limited	India	Consumer Discretionary
7	Food Corporation of India	India	Consumer Staples
8	Tata Steel Limited	India	Materials
9	State Bank of India	India	Financials
10	Hindalco Industries Limited	India	Materials
11	Tata Consultancy Services Limited	India	Information Technology
12	Larsen & Toubro Limited	India	Industrials
13	JSW Steel Limited	India	Materials
14	NTPC Limited	India	Utilities
15	Vedanta Limited	India	Materials
16	Infosys Limited	India	Information Technology
17	Bharti Airtel Limited	India	Communication Services
18	ICICI Bank Limited	India	Financials
19	Housing Development Finance Corporation Limited	India	Financials
20	Steel Authority of India Limited	India	Materials

Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022

Table 1.10. Twenty biggest billionaire EMNCs from Southeast Asia (by revenues), 2022

Rank	Company	Country	Sector
1	PTT Public Company Limited	Thailand	Energy
2	Petroliam Nasional Berhad	Malaysia	Energy
3	PT Pertamina (Persero)	Indonesia	Energy
4	Perusahaan Perseroan (Persero)	Indonesia	Utilities
5	San Miguel Corporation	Philippines	Industrials
6	CP ALL Public Company Limited	Thailand	Consumer Staples
7	The Siam Cement Public Company Limited	Thailand	Materials
8	Charoen Pokphand Foods Public Company Limited	Thailand	Consumer Staples
9	Provincial Electricity Authority	Thailand	Utilities
10	PTT Global Chemical Public Company Limited	Thailand	Materials
11	Tenaga Nasional Berhad	Malaysia	Utilities
12	Sime Darby Berhad	Malaysia	Industrials
13	Thai Oil Public Company Limited	Thailand	Energy
14	PT Gudang Garam Tbk	Indonesia	Consumer Staples
15	SM Investments Corporation	Philippines	Industrials
16	PT Bank Rakyat Indonesia (Persero)	Indonesia	Financials
17	IRPC Public Company Limited	Thailand	Energy
18	Vietnam National Petroleum Group	Vietnam	Energy
19	Thai Beverage Public Company Limited	Thailand	Consumer Staples
20	PT Indonesia Asahan Aluminium (Persero)	Indonesia	Materials

Source: EMI research team based on data from Standard & Poor's Capital IQ accessed in August 2022

As in Latin America, energy companies also dominate the biggest company list for India and Southeast Asia. Compared to the Latin American and Southeast Asian lists, India's list is more diversified with the presence of two IT companies. India represents another emerging technological power in addition to China, a growth driver that differentiates the country from many other emerging markets. Accounting for 9% of India's GDP, the IT industry has achieved a growth rate of 15.5% last year, nearly doubling the country's economic growth (IBEF, 2022). As the second largest economy in Southeast Asia, Thailand dominates the Southeast Asian EMNC list—9 out of 20 companies were Thai.

1.9. U.S. DOMINATES PUBLICLY QUOTED COMPANIES

While Chinese companies have become the biggest in the world by revenues, U.S. companies dominate public markets. The U.S. equity market has long been the largest in the world. As of July 2022, the New York Stock Exchange (NYSE) was 3.5 times larger than the Shanghai Stock Exchange in China, the biggest emerging market stock exchange. Overall, equity markets are significantly smaller in emerging economies.

Nine E20+1 exchanges are in Table 1.11. While Iran had little presence on the Fortune 500 list, its Tehran Stock Exchange (TSE) has remained relatively strong among emerging players, with a value higher than that of the largest exchanges in Brazil, Russia, Indonesia, and other E20 countries. It was considered the "best-performing stock market" in 2020 following the COVID-19 outbreak, soaring while others plunged (Goodman, 2020). Analysts have attributed this performance to the "resilience of Iran's manufacturers" (The Economist, 2022).

Table 1.11. 20 Biggest Stock Exchanges by total value of market cap of listed companies, July 2022

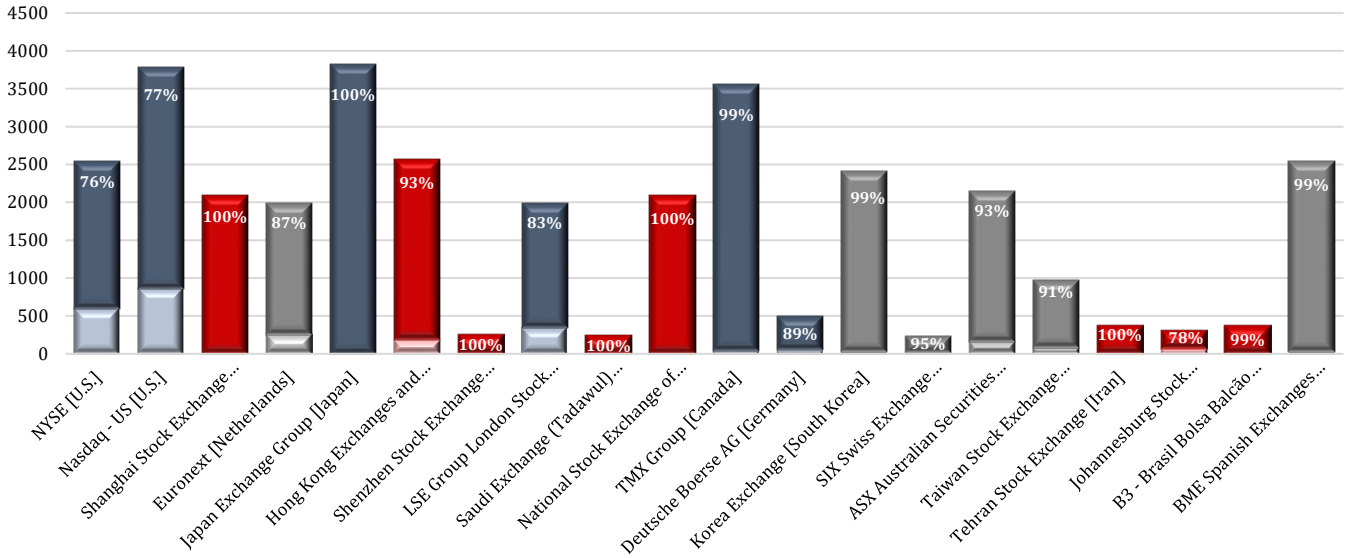
Exchange	Country	Value (USD, trillion)
NYSE	United States	24.68
NASDAQ	United States	19.50
Shanghai Stock Exchange	China	7.05
Euronext	Netherlands	5.90
Japan Exchange Group	Japan	5.31
Shenzhen Stock Exchange	China	5.15
Hong Kong Exchanges	China	4.57
National Stock Exchange of India	India	3.32
LSE Group	United Kingdoom	3.17
Saudi Stock Exchange (Tadawul)	Saudi Arabia	3.15
TMX Group	Canada	2.97
Nasdaq Nordic and Baltics	Sweden	1.89
SIX Swiss Exchange	Switzerland	1.87
Deutsche Boerse AG	Germany	1.79
Korea Exchange	South Korea	1.74
ASX Australian Securities Exchange	Australia	1.70
Taiwan Stock Exchange	China	1.56
Tehran Stock Exchange	Iran	1.22
Johannesburg Stock Exchange	South Africa	1.08
B3 - Brasil Bolsa Balcão	Brasil	0.85

Source: EMI Research Team based on Statista https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies//, accessed September 2022.

From 2021 to 2022, the tech-heavy Nasdaq has fallen by 22.3%, while the Tadawul—the Saudi Arabia exchange where Saudi Aramco is listed—grew by 24.8%, mainly driven by the rising oil price. Emerging Market's stock markets have been home to the world's biggest Initial Public Offerings (IPOs) which have contributed to their growth. Half of the biggest IPOs over the last 12 years have taken place in EM's stock markets. The IPOs of companies like Saudi Aramco, Saudi National Bank, BB Seguridade participaçoes (Brazil), Petronas Chemicals (Malaysia) and several from China including Postal Savings bank of China, China Tower, Chinese SMIC, Xiaomi, Agricultural Bank represented huge investment opportunities for investors both at home and abroad.

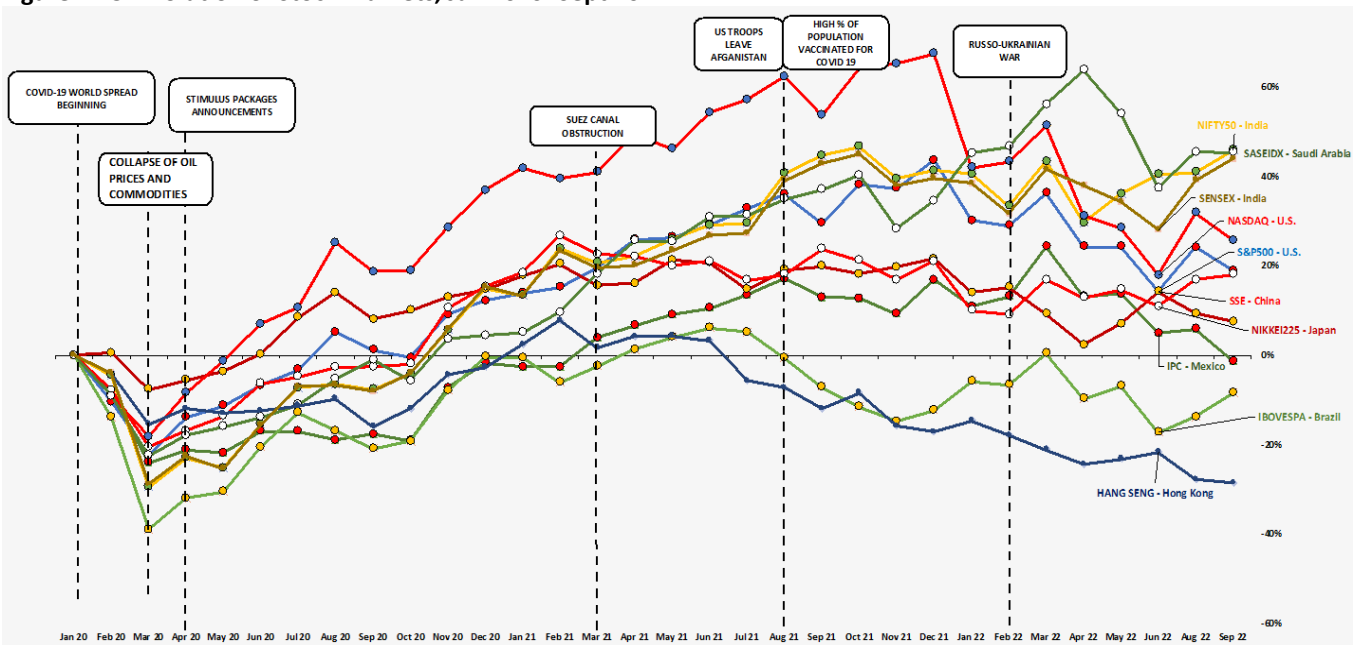
Stock markets from G7 countries like the American NYSE and Nasdaq are the most internationalized exchanges, where nearly a quarter of listed companies are foreign companies. South Africa's JSE was an outlier in emerging markets, where 22% of listed firms were foreign (Figure 1.14). China has also recently expressed interest in opening its financial markets to foreign companies (Bloomberg News, 2022) at about the same time when it tightened scrutiny of domestic firms seeking offshore listings.

Figure 1.14. Number of companies listed among the top twenty stock markets by market value in May 2022, with the share of domestic (darker) versus foreign (lighter) stocks



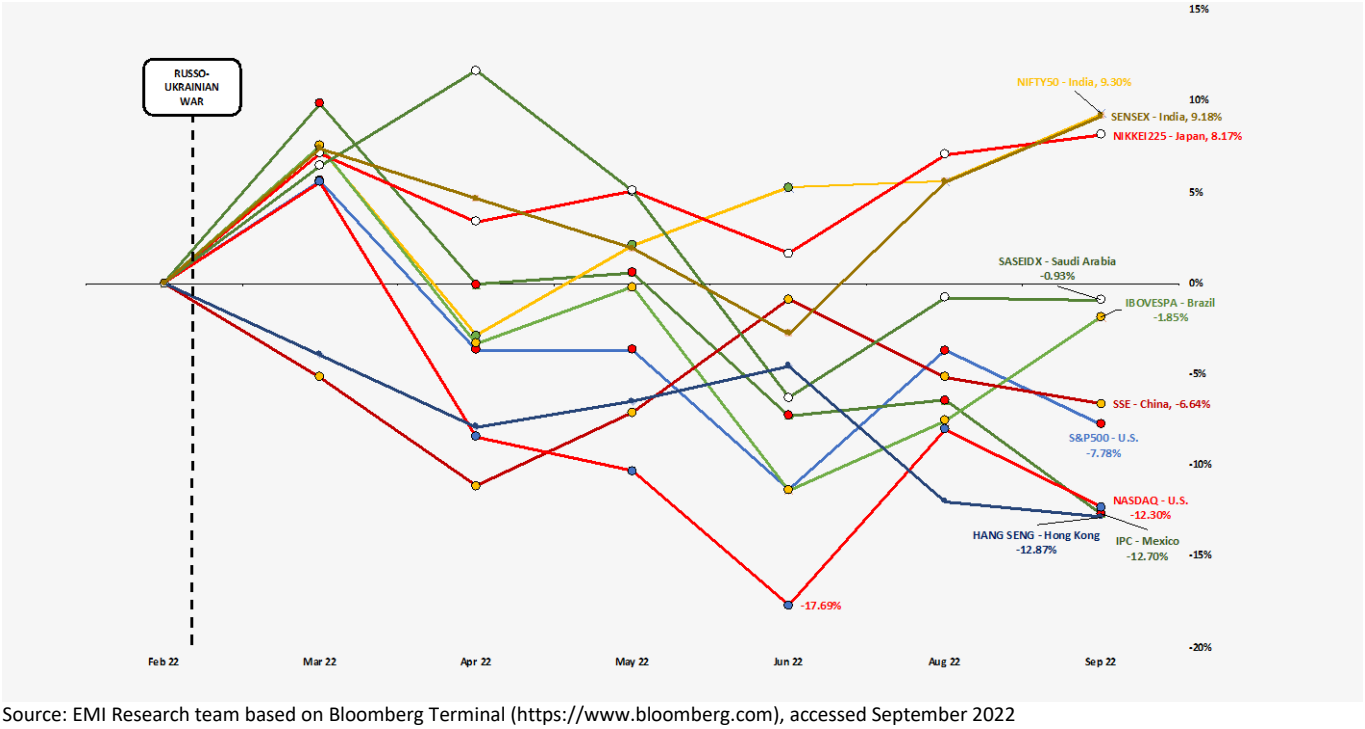
Source: EMI Research Team based World Federation of Exchanges (https://www.world-exchanges.org/) accessed in July 2022.

Figure 1.15. Evolution of Stock markets, Jan 2020- Sept 2022



Source: EMI Research team based on Bloomberg Terminal (https://www.bloomberg.com), accessed September 2022

Figure 1.16. Evolution of Stock markets after the Russo-Ukrainian war



Source: EMI Research team based on Bloomberg Terminal (https://www.bloomberg.com), accessed September 2022

The Russia-Ukraine war has increased the volatility of global stock markets. Both countries hold a considerable share of the global commodities trade, including nickel, wheat, and natural gas (Relli, 2022) Stock exchanges around the globe were significantly troubled. After a short-term lag, almost all exchanges (Figure 1.15) saw drastic reductions in total market cap in April and May 2022. In August-September 2022, however, the markets rebounded, with SASEIDX and IBOVESPA nearly returning to pre-war levels (-0.93% and -1.85% respectively) and a few others exceeding their pre-war performance.

Compared to the COVID-19 pandemic which had the most negative impacts on emerging market exchanges, the war showed different patterns. Nasdaq in the U.S. was hit the hardest, which dropped by 5% in the first month following the war and nearly 20% in four months. Two Indian exchanges, NIFTY50 and SENSEX, and Japan's NIKKEI255 showed resilience during the period. NIFTY50 and SENSEX both experienced slight declines in the first two months following the war, but companies on those exchanges are now valued, in total, over 9% higher than the pre-war time. Japan's NIKKEI255 was the only exchange whose value has not dropped below the pre-war level over the past 7 months.

As of the end of August 2022, four EMNCs were listed among the top 20 companies by market capitalization (Table 1.12). Saudi Aramco consistently dominated with over USD 2000 billion market cap. In the past three years, it has surpassed Apple and topped the ranking several times, and the most recent data suggested that it is one of the world's most valuable companies (in 2022, number one or number two). Among the Chinese EMNCs, Tencent has demonstrated relatively stable performance, whereas its close competitor Alibaba, has lost nearly USD250 billion in market value since 2020 and has dropped out of the top 20 list (currently at #31). At the beginning of 2020, Alibaba almost caught up with Amazon, its U.S. counterpart. However, while Amazon held its position, Alibaba, facing increasing regulatory pressure and market uncertainties, saw its stock price plummet for the following two years.

Table 1.12. Twenty biggest companies by market capitalization as of August end 2022

Company	Country	Industry	Market Capitalization [08/31/2022] (USDmm)
Apple Inc.	United States	Technology Hardware, Storage and Peripherals	2,526,643.6
Saudi Arabian Oil Company	Saudi Arabia	Integrated Oil and Gas	2,193,646.6
Microsoft Corporation	United States	Systems Software	1,950,015.0
Alphabet Inc.	United States	Interactive Media and Services	1,417,353.3
Amazon.com, Inc.	United States	Internet and Direct Marketing Retail	1,291,476.3
Tesla, Inc.	United States	Automobile Manufacturers	863,615.7
Berkshire Hathaway Inc.	United States	Multi-Sector Holdings	618,109.1
UnitedHealth Group Incorporated	United States	Managed Health Care	485,772.3
Meta Platforms, Inc.	United States	Interactive Media and Services	437,882.3
Taiwan Semiconductor Manufacturing	Taiwan	Semiconductors	430,872.7
Johnson & Johnson	United States	Pharmaceuticals	424,191.9
Visa Inc.	United States	Data Processing and Outsourced Services	411,097.4
Exxon Mobil Corporation	United States	Integrated Oil and Gas	398,384.4
Tencent Holdings Limited	China	Interactive Media and Services	397,251.1
NVIDIA Corporation	United States	Semiconductors	375,689.7
Walmart Inc.	United States	Hypermarkets and Super Centers	363,339.4
Kweichow Moutai Co., Ltd.	China	Distillers and Vintners	350,782.8
JPMorgan Chase & Co.	United States	Diversified Banks	333,521.5
The Procter & Gamble Company	United States	Household Products	329,055.8
Louis Vuitton	France	Apparel, Accessories and Luxury Goods	327,418.2

Source: EMI Research team based on S&P Capital IQ https://www.capitaliq.com/, accessed July 2022

In 2021, the two fastest-growing EMNCs in market value were Brazil's Eletrobras and India's Adani Group (see Appendix 2). Eletrobras's growth was mainly driven by privatization—the Brazilian government reduced its stake in the company from 72% to 45%. The deal was one of the largest in the country's history (Andrade, 2022), with the aim to reduce costs, increase agility, and attract new capital to invest in renewable resource research and new technology (Fucushima, 2022). State ownership of companies is common in emerging markets. Driven by the need to reduce the burden of state-owned enterprises (SOEs) on the national budget, remove barriers to foreign investment, and improve efficiency and competitiveness, many emerging economies started to pursue privatization (Mugan & Yuce, 2003). Latin American countries such as Chile were the early EM privatizers (with numerous large-scale privatization programs launched between 1985 and 2008), followed by China and India (which saw a surge in privatization deals between 2009 and 2015) (Estrin & Pelletier, 2018). Privatization in Brazil started relatively late, but it has been aggressive: the government set the agenda to "liberalize the economy" in 2019 and has raised over 40 billion in revenue since then from hundreds of privatization projects (Government of Brazil, 2021).

The Adani Group, one of India's top conglomerates has interests spanning commodities, infrastructure, power generation, and real estate. The diverse presence across economic sectors allowed the company to grow as the Indian economy takes off. However, its aggressive expansion into capital-intensive industries, predominantly funded with debt, has also raised concerns about the long-term risks to investors (Reuters, 2022). With a net worth of USD 148.6 billion, his Founder and Chairman, Gautam Adani, and his family are the world's fourth richest.

1.10. Where to go from here?

As seen in this chapter, the presence of EMNCs continues to grow. In terms of the number of large companies (both in the Fortune Global 500 and on the 'billionaire' list of companies) China now leads the U.S. Other emerging markets are also present in the billionaire list in lesser numbers. National oil and energy companies dominate EMNCs and the presence of EMNCs in the service sector is smaller.

As the pendulum has swung back to the government, companies have had to adjust. In parallel, societal demands are on the rise and companies' practices all over the world are under increased scrutiny. Over the last 50 years, CEOs, board directors, business schools and other business practitioners have preached the need to maximize efficiency, shareholder value, and client willingness to pay. Western firms now face renewed pressure to change their values quickly to adjust to a new environment with several challenges including:

- How to adjust to government regulations?
- Where and how to allocate investments?
- How to continue to invest in Innovation and new technologies?
- How to move the focus of Global Value Chains from efficiency to resiliency? and
- Answer societal demands including improving the environment and addressing social and governance concerns (Casanova & Miroux 2021 and Chapter 4).

At the same time, the competition from EMNCs, mainly SOEs, which prioritize growth over profits and long-term goals over the short-term, are changing the competitive landscape for western multinationals which have dominated the business world since the second world war.

Business schools and business leaders need to adjust their values, vision and mission and the narratives that go with them. New winning strategies are needed to succeed in this post-global world. A world that seemed to be flat in 1990 has today multiple geographical and societal challenges that need to be faced. Businesses could and have to become a force for the good of society

References

Andrade, V. (2022). Brazil Kicks Off $7.4 Billion Eletrobras Privatization. *Bloomberg News*. Available from: https://www.bloomberg.com/news/articles/2022-05-27/brazil-kicks-off-7-4-billion-eletrobras-privatization?leadSource=uverify%20wall#xj4y7vzkg (accessed in January 2023)

Bloomberg News. (2022). China Courts Foreign Firms for Cross-Border Listing Drive. Available from: https://www.bloomberg.com/news/articles/2022-07-19/china-said-to-court-foreign-firms-for-cross-border-listing-drive?leadSource=uverify%20wall#xj4y7vzkg (accessed in January 2023)

Ding, N., Fung, H.-G., Jia, J. (2017). Comparison of Bank Profitability in China and the USA. *China & World Economy 25*(1): 90-108. https://doi.org/10.1111/cwe.12188

Estrin, S., & Pelletier, A. (2018). Privatization in developing countries: What are the lessons of recent experience? *The World Bank Research Observer, 33*(1), 65-102. doi:10.1093/wbro/lkx007

Fucushima, L. (2022). Brazil's Eletrobras may become force for energy transition after privatization. *Reuters*. Available from:https://www.reuters.com/article/eletrobras-privatization-idAFL1N2XV2CQ (accessed in January 2023)

Gay, D. (2021). The challenge of services growth in least developed countries. *United Nations – LDC Portal.* Available from: https://www.un.org/ldcportal/content/challenge-services-growth-least-developed-countries (accessed in January 2023)

Goodman, P. (2020). Iran's Economy is Bleak. Its Stock Market is Soaring. *The New York Times.* Available from: https://www.nytimes.com/2020/02/13/business/iran-stock-market.html (accessed in January 2023)

Government of Brazil. (2021). Brazil privatization projects. Available from: https://www.gov.br/en/government-of-brazil/latest-news/2021/brazil-privatization-projects (accessed in January 2023)

INDIA Brand Equity Foundation (IBEF) (2022). IT & BRM Industry in India. Available from: https://www.ibef.org/industry/information-technology-india (accessed in January 2023)

Makortoff, K. (2022). Saudi Aramco profits soar by 90% as energy prices rise. *The Guardian.* Available from: https://www.theguardian.com/business/2022/aug/14/saudi-aramco-profits-soar-by-90-per-cent-as-energy-prices-rise-oil (accessed in January 2023)

Mugan, C. F. N., & Yüce, A. (2003). Privatization in emerging markets : The case of turkey. *Emerging Markets Finance & Trade, 39*(5), 83-110. doi:10.1080/1540496X.2003.11052550

Nikkei Asia. (2022). Hon Hai Precision Industry Co., Ltd. Available from: https://asia.nikkei.com/Companies/Hon-Hai-Precision-Industry-Co.-Ltd (accessed in January 2023)

Relli, D. (2022). Russia-Ukraine war throwing up opportunities for investors in 4 sectors. *The Economic Times*. Available from: https://economictimes.indiatimes.com/markets/stocks/news/russia-ukraine-war-throwing-up-opportunities-for-investors-in-4-sectors/articleshow/90333357.cms#:~:text=Some%20sectors%20that%20stand%20to,Ukrainian%20and%20Eastern%20European%20markets (accessed in January 2023)

Reuters. (2022). India's Adani Group 'deeply overleveraged', CreditSights says. Available from: https://www.reuters.com/world/india/indias-adani-group-deeply-overleveraged-creditsights-says-2022-08-23/ (accessed in January 2023)

Smith, E. (2022). Russia's Gazprom rallies by over 20% after bumper profit and dividend announcement. *CNBC*. Available from: https://www.cnbc.com/2022/08/31/russias-gazprom-surge-after-bumper-profit-and-dividend-announcement.html (accessed in January 2023)

Somwaru, A. & Valdes, C. (2004). Brazil's Beef Production and Its Efficiency: A Comparative Study of Scale Economies. *GTAP Seventh Annual Conference on Global Economic Analysis.* The World Bank, Washington, D.C., United States. Available from: https://www.gtap.agecon.purdue.edu/resources/download/1860.pdf (accessed in January 2023)

Tang, Z., Yu, X., Tham, E. (2022). China's largest banks show wounds from property sector crisis. *Reuters*. Available from: https://www.reuters.com/business/finance/top-china-bank-icbc-worlds-largest-posts-49-h1-profit-rise-2022-08-30/(accessed in January 2023)

The Economist. (2022). Iran's flourishing stockmarket reflects its resilient economy. Available from: https://www.businessreview.global/latest/62340fa3e71ef40dad24f318 (accessed in January 2023)

The Word Bank. (2021). At Your Service? The Promise of Services-Led Development. Available from: https://www.worldbank.org/en/topic/competitiveness/publication/promise-of-services-led-development (accessed in January 2023)

Wu, J. & Lozano, C. (2022). China's biggest banks face slower earnings growth in 2022 amid macro headwinds. *S&P Global.* Available from: https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/china-s-biggest-banks-face-slower-earnings-growth-in-2022-amid-macro-headwinds-69719976 (accessed in January 2023)

Appendix I

Table 1.13. 10 largest companies per selected sectors on Fortune Global 500, 2010 versus 2022.

Financials		Energy	
2010	2022	2010	2022
Company	Company	Company	Company
6. Japan Post Holdings Co., Ltd.	14. Berkshire Hathaway	2. Royal Dutch Shell plc	3. State Grid
9. AXA	22. Industrial & Commercial Bank of China	3. Exxon Mobil Corporation	4. China National Petroleum
12. ING Group	24. China Construction Bank	4. BP p.l.c.	5. Sinopec Group
13. General Electric Company	25. Ping An Insurance	7. China Petrochemical Corp.	6. Saudi Aramco
15. Bank of America Corporation	28. Agricultural Bank of China	8. State Grid Corporation of China	12. Exxon Mobil
18. BNP Paribas	40. China Life Insurance	10. China National Petroleum Corporation	15. Shell
19. Assicurazioni Generali SpA	42. Bank of China	11. Chevron Corporation	23. Glencore
20. Allianz AG	47. Allianz	14. Total S.A.	27. TotalEnergies
25. J.P. Morgan Chase & Co.	48. AXA	17. ConocoPhillips	35. BP
28. Berkshire Hathaway Inc.	63. JPMorgan Chase	24. ENI S.p.A.	37. Chevron

Technology		Industrials	
2010	2022	2010	2022
Company	Company	Company	Company
26. Hewlett-Packard Company	7. Apple	229. Caterpillar Inc.	75. Hengli Group
32. Samsung Electronics Co., Ltd.	17. Alphabet	237. ABB Ltd.	159. Siemens
40. Siemens Aktiengesellschaft	18. Samsung Electronics	239. Mitsubishi Heavy Industries, Ltd.	165. General Electric
47. Hitachi, Ltd.	20. Hon Hai Precision Industry	290. Alstom	199. Shandong Weiqiao Pioneering Group
48. International Business Machines Corporation	33. Microsoft	341. Wolseley plc	224. Sinomach
65. Panasonic Corporation	71. Meta Platforms	359. Fujifilm Holdings Corporaton	245. Midea Group
67. LG Corporation	86. Dell Technologies	362. International Paper Company	265. Caterpillar
69. Sony Corporation	96. Huawei Investment & Holding	370. 3M Company	318. Deere
89. Toshiba Corporation	113. Hitachi	372. Deere & Company	351. Mitsubishi Electric
112. Hon Hai Precision Industry Co., Ltd.	116. Sony	375. Hyundai Heavy Industries	385. CRRC Group

Motor Vehicles & Parts		Transportation	
2010	2022	2010	2022
Company	Company	Company	Company
5. Toyota Motor Corporation	8. Volkswagen	86. Deutsche Post AG	81. China Post Group
16. Volkswagen AG	13. Toyota Motor	92. United States Postal Service	97. United Parcel Service
23. Ford Motor Company	29. Stellantis	147. A.P. Moller-Maersk Group	99. Deutsche Post DHL Group
30. Daimler AG	38. Mercedes-Benz Group	157. United Parcel Service, Inc.	127. COSCO Shipping
38. General Motors Corporation	53. Ford Motor	177. Deutsche Bahn AG	129. FedEx
51. Honda Motor Co., Ltd.	59. BMW Group	205. FedEx Corporation	151. U.S. Postal Service
63. Nissan Motor Co., Ltd.	61. Honda Motor	214. Societe Nationale des Chemins de Fer	152. China Merchants Group
78. Hyundai Motor Company	64. General Motors	246. Deutsche Lufthansa AG	206. Maersk Group
82. Bayerische Motoren Werke	68. SAIC Motor	265. Air France-KLM	228. CMA CGM
85. Fiat S.p.A.	79. China FAW Group	279. La Poste	230. Deutsche Bahn

Food, Beverages & Tobacco

2010 Company	2022 Company
44. Nestlé	103. Nestlé
88. Archer-Daniels-Midland Company	124. Archer Daniels Midland
121. Unilever N.V./ Unilever PLC	143. PepsiCo
171. PepsiCo, Inc.	192. Wilmar International
172. Bunge Limited	194. JBS
179. Kraft Foods Inc.	219. Bunge
196. Anheuser-Busch InBev SA	239. Anheuser-Busch InBev
245. The Coca-Cola Company	276. Louis Dreyfus
297. Tyson Foods, Inc.	292. Tyson Foods
331. Philip Morris International Inc.	356. New Hope Holding Group

Retailing

2010 Company	2022 Company
1. Wal-Mart Stores, Inc.	1. Walmart
79. Costco Wholesale Corporation	2. Amazon
97. The Home Depot, Inc.	26. Costco Wholesale
98. Target Corporation	43. Home Depot
142. Best Buy Co. Inc.	46. JD.com
152. Lowe's Companies, Inc.	55. Alibaba Group Holding
165. Sears Holdings Corporation	87. Target
302. Hutchison Whampoa Limited	101. Lowe's
309. PPR, SA	147. Seven & I Holdings
340. Amazon.com Inc.	258. Best Buy

Materials

2010 Company	2022 Company
99. ArcelorMittal	44. China Baowu Steel Group
123. ThyssenKrupp AG	58. China Minmetals
132. Compagnie de Saint-Gobain	76. Amer International Group
191. Nippon Steel Corporation	139. Aluminum Corp. of China
253. JFE Holdings, Inc.	153. ArcelorMittal
272. POSCO	176. Jiangxi Copper
276. Baosteel Group Corporation	188. POSCO Holdings
314. Hebei Iron & Steel Group Co., Ltd.	189. HBIS Group
332. China Minmetals Corporation	196. China National Building Material
349. CRH plc	214. Nippon Steel Corporation

Engineering & Construction

2010 Company	2022 Company
133. China Railway Construction	9. China State Construction
137. China Railway Group	34. China Railway Engineering Group
162. Vinci	39. China Railway Construction
168. Bouygues SA	60. China Communications
187. China State Construction	100. PowerChina
224. China Communications	150. Pacific Construction Group
315. China Metallurgical Group Corp.	218. Vinci
322. Hochtief A.G.	269. China Energy Engineering Group
346. ACS	299. Susun Construction Group
393. Fluor Corporation	314. Bouygues

Source: EMI research team based on Fortune (https://fortune.com/), data accessed in August 2022.

Appendix II – High-growth EMNCs by market capitalization in 2021

Centrais Elétricas Brasileiras S.A. – Eletrobrás (Brazil)

Centrais Elétricas Brasileiras S.A. – Eletrobras was founded in 1962 in Brazil. It engages in cooperation with its subsidiaries, in the generation, transmission and distribution of electric power through hydroelectric, thermal, nuclear, wind and solar plants. On the frontstage, Eletrobrás is a company with over 12,000 employees, working on segments such as Life and Health, Property and Casualty, Banking, Securities, Technology, and others. From 2021 to the present year, 2022, Eletrobrás's market capital increased 153,3%, achieving a value of USD 23,777.7 mm.

Reason: Eletrobrás is growing because the company goal is to reduce the state´s participation up to 50% to be more efficient with a privatization process. This privatization is the world's second-largest equity sales of 2022 so far and also it is the second largest in Brazil on record.

Ticker: ELET6 (BOVESPA)
Foundation year: 1962
HQ: Rio de Janeiro, Brazil
Industry: Services: Electric Utilities
Ownership: Federative Republic of Brazil
NAICS: Electric Power Generation, Transmission and Distribution (2211)
Total Revenue (2021): 6,893.3 USDmm
Total Assets (2021): 34,507.3 USDmm
Net Income (2021): 1,227 USDmm
Employees: 12,126
Market Capitalization (July 6, 2022): 23,777.7 USDmm

Adani Enterprises Limited (India)

Adani Enterprises Limited, shortly known as Adani, is a globally integrated infrastructure company founded by Gautam S. Adani in 1988. Primarily engaged in processing, exploration and development of agricultural commodities, textiles, gems and jewelry, fertilizer, and raw materials. Also, have made several developments in coal trading, coal mining, oil and gas exploration, ports, multi-modal logistics, power generation and transmission, and gas distribution. This way, they offer services on segments such as trading, power, port, agro, real estate and others with many subsidiaries around the world.

The company is listed on the Bombay Stock Exchange, and nowadays it has an international presence in countries on every continent, like in Mauritius, the United Arab Emirates, the United States, China, Singapore, Indonesia, Myanmar, being present in the Middle East, Southeast Asia, and Europe.

From 2021 to the present year, 2022, the market capitalization of the subsidiaries of Adani has increased by around 35%, achieving Adani Enterprises Limited a value of USD 32,759.2 mm.

Reason: This is a diversified group since it has a lot of companies from different areas that are part of the Adani group. Its good growth is also for the fact that the prices have increased because of the economic growth in India and a heatwave in the north-western parts of this country, where the electricity demand continues to grow, and the group has a presence with Adani power limited.

Ticker: 512599 (BSE)
Foundation year: 1988
HQ: Ahmedabad, India / Navrangpura, India
Industry: Wholesale: Trading Companies and Distributors
Ownership: Gautam S Adani / Rajesh S Adani On Behalf S B Adani Family Trust
NAICS: Miscellaneous Durable Goods Merchant Wholesalers (4239)
Total Revenue (2021): 5,404.2 USDmm
Total Assets (2021): 7,058.9 USDmm
Net Income (2021): 126.1 USDmm
Employees: 5,051
Market Capitalization (July 6, 2022): 32,759.2 USDmm

Source: EMI Research team based on data and information from Capital IQ, Orbis, Bloomberg, and Adani Integrated Report 2021 accessed by July 2022.

Chapter 2

U.S. COMPANIES CONTINUE TO LEAD THE WAY GLOBALLY[3]

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Executive Summary

In this chapter, we document the global footprint of emerging market multinationals. We analyze the internationalization progress of E20 companies, track cross-border merger and acquisition deals, and identify the drivers for globalization across firms in different countries. We also compare E20+1 companies' investments in research and development to exemplify the emergence of new innovative powers. We show the United States' leading role as a global investor and an R&D spender and China's rapidly growing international presence both as an investor and innovator.

Keywords: Internationalization, mergers and acquisition, foreign investment, Greenfield investments, FDI, OFDI, R&D investment

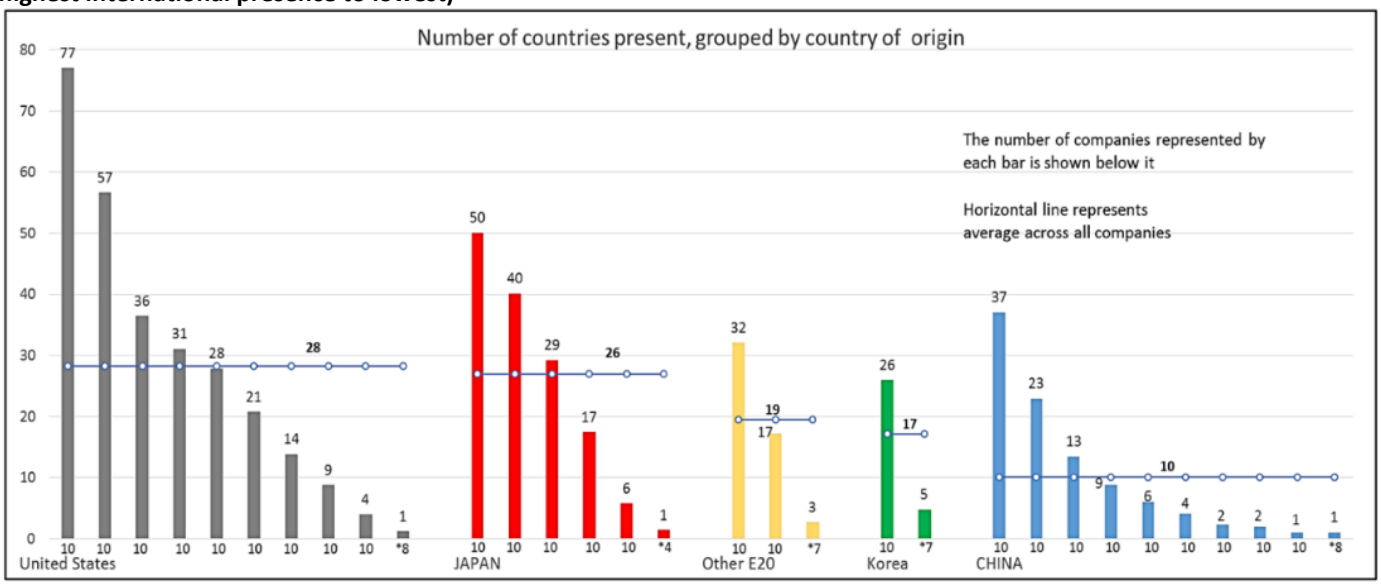
2.1. Internationalization as presence in number of countries

Figure 2.1 compares the international presence of firms in the U.S., Japan, Korea, China, and E20 countries in 2016. U.S. companies had undoubtedly the biggest international presence. At that time, it was a surprise that Chinese firms had a greater foreign presence than many academics had traditionally assumed (Chapter 4 in Casanova and Miroux 2016). Over the past few years, the number of Japanese firms with foreign subsidiaries has decreased, while Chinese firms have continued to expand globally (Table 2.5). Other E20 countries' international presence has remained relatively constant.

As we wanted to replicate the exercise done in 2016 and 2017 (in Casanova & Miroux 2016 and 2017), we followed the steps described in this paragraph. A list of billionaire companies was generated using a dataset from Capital IQ. From that group, we launched the 500 biggest EMNCs which include 360 Chinese MNCs. Then we compare these 360 biggest Chinese multinationals with 360 biggest billionaire firms in the United States. Headquarters were labeled based on the Capital IQ database. For instance, according to the Securities and Exchange Commission, Alibaba Group Holding Limits is a "Cayman Islands holding company", while according to Capital IQ, it is headquartered in China. Hence, we used China as the headquarters of Alibaba. We then use data from ORBIS to generate counts of foreign subsidiaries for each of these firms. Out of the 360 biggest U.S. firms by revenues, 330 were multinationals (i.e., had at least one subsidiary in a country different from the home country), and, in total, U.S. firms had subsidiaries in 173 countries. Of the 360 Chinese biggest firms by revenues, 321 were multinational, i.e., present in at least a country outside the home country, and they were present in a total of 160 different countries (Source: Casanova & Miroux 2016 Figure 2.2). Regarding Chinese firms, Hong Kong and Macau were both considered domestic markets.

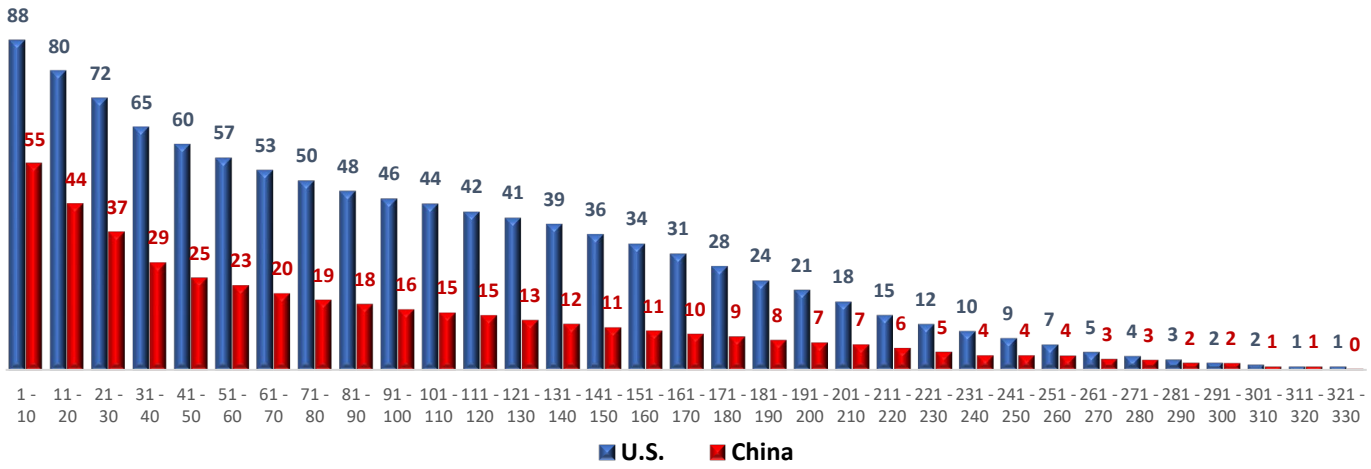
[3] The contribution of Daniel dos Anjos, principal researcher at EMI with data analytics and Xingqi Ye, Researcher at EMI, is gratefully acknowledged.

Figure 2.1. Number of countries where firms have at least one subsidiary or affiliate, grouped by headquarters' country (Casanova & Miroux 2016), average number of countries for each of the 10-company groups, organized from the group with highest international presence to lowest)



Note: The number below each bar indicates the number of companies for that bar.
For each company, the number of countries refer to the number of countries including its home country.
Source: Casanova & Miroux 2016

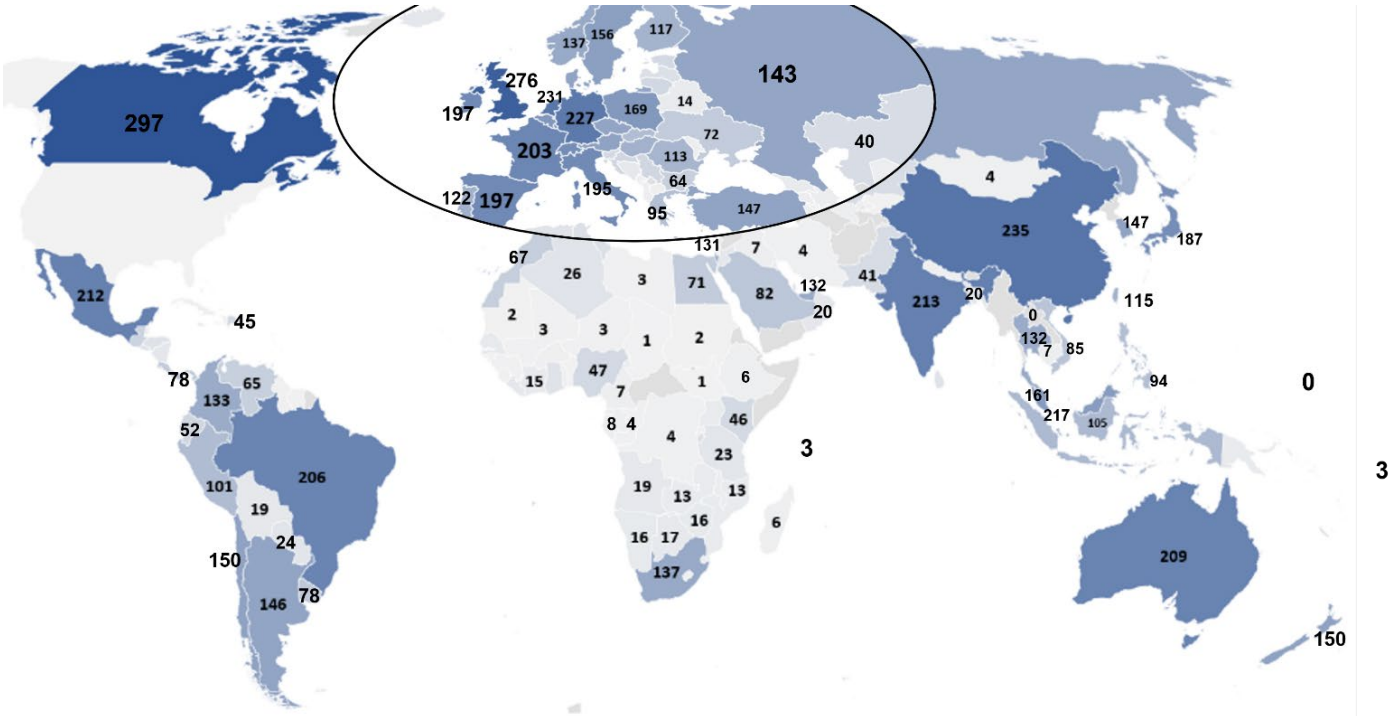
Figure 2.2. Average number of countries where the 330 biggest firms from U.S. and China have at least one subsidiary (outside the home country) or affiliate, per groups of 10-companies, from the group with highest international presence to lowest, 2022



*from the sample of billionaire companies (see Chapter 1), based on Capital IQ
Source: EMI research team based on Orbis (https://orbis.bvdinfo.com/), accessed between September and October 2022

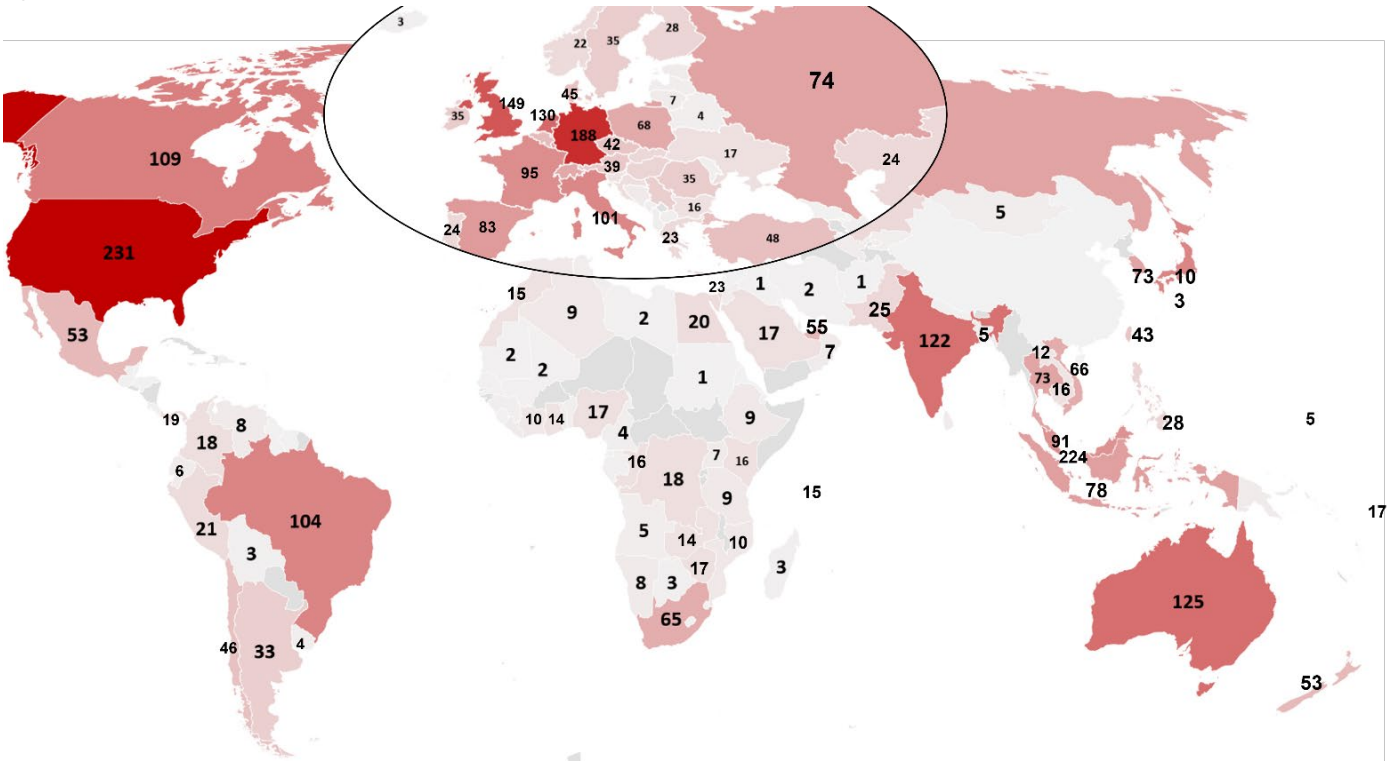
Figure 2.2 compares the internationalization of U.S. firms to that of Chinese firms in 2022. It shows the average number of countries where U.S. and Chinese firms are present, per group of ten companies from the most internationalized group to the least. The U.S. companies, on average, were present in about 30 more countries than Chinese companies for each of the ten most internationalized groups. Both Chinese and U.S. companies increased their global presence as counted by the number of countries in which they are present. While the difference between the U.S. and China is significant, the gap has narrowed since 2016.

Figure 2.3. Number of companies from the 330 largest U.S. firms which have at least a subsidiary or affiliate – per country* 2022



* Europe & Central Asia zoomed for better view
Source: EMI research team based on Orbis (https://orbis.bvdinfo.com/), accessed between September and October 2022

Figure 2.4. Number of companies from the 330 largest Chinese firms which have at least a subsidiary or affiliate - per country* 2022



* Europe & Central Asia zoomed for better view
Source: EMI research team based on Orbis (https://orbis.bvdinfo.com/), accessed between September and October 2022

Figure 2.3 and Figure 2.4 allow us to compare the geographical distributions of the foreign subsidiaries of the biggest companies headquartered in China with those headquartered in the U.S. There are 25 countries where Chinese companies have a greater presence than U.S. companies, including Singapore (224 Chinese companies vs 217 U.S. companies), Cambodia (16 versus 7),

Samoa (17 versus 3), Laos People Democratic Republic (12 versus 0), Micronesia (5 versus 0), Seychelles (15 versus 3) and in Africa, Democratic Republic of Congo (18 versus 4), Republic of Congo (16 versus 4).

Table 2.1. Top 20 popular destinations for the 330 biggest multinationals by revenues: China versus the U.S. (2021)

From China				From United States			
1 United States	231	**11** Japan	103	**1** Canada	297	**11** France	203
2 Singapore	224	**12** Italy	101	**2** United Kingdom	276	**12** Spain	197
3 Germany	188	**13** France	95	**3** China	235	**13** Ireland	197
4 Cayman Islands	170	**14** Malaysia	91	**4** Netherlands	231	**14** Italy	195
5 United Kingdom	149	**15** Luxembourg	86	**5** Germany	227	**15** Switzerland	189
6 Netherlands	130	**16** Spain	83	**6** Singapore	217	**16** Japan	187
7 Australia	125	**17** Indonesia	78	**7** India	213	**17** Belgium	170
8 India	122	**18** Bermuda	77	**8** Mexico	212	**18** Luxembourg	169
9 Canada	109	**19** Russian Federation	74	**9** Australia	209	**19** Poland	169
10 Brazil	104	**20** Thailand	73	**10** Brazil	206	**20** Malaysia	161

Source: EMI research team based on Orbis (https://orbis.bvdinfo.com/), accessed October 2022

The U.S. is the most popular destination for the biggest Chinese firms' international expansion, followed by Singapore and Germany (Table 2.1). China was the third most popular foreign market for U.S. multinationals, following Canada and the UK. Geographical proximity has played a role in the choice of subsidiaries, as demonstrated by Singapore's attractiveness to China and Canada's attractiveness to the U.S. Moreover, the U.S. favors similar languages (Canada, UK, India, and Australia) and cultural similarities (European countries like the Netherlands, and Germany). However, the Chinese presence is more widely spread in countries that are not always close either geographically or culturally. India, Brazil, and Mexico are three emerging markets that are also popular among American or Chinese multinationals (except for Mexico).

Table 2.2. Twenty most internationalized companies based on the number of countries where the firm has at least a subsidiary or affiliate: China versus the U.S.[4]

	From China	
1 HUAWEI INVESTMENT & HOLDING CO., LTD	Communications Equipment	88
2 LENOVO GROUP LIMITED	Technology Hardware, Storage and Peripherals	56
3 TENCENT HOLDINGS LIMITED	Interactive Media and Services	56
4 SANY GROUP COMPANY LIMITED	Construction Machinery and Heavy Trucks	52
5 AIA GROUP LTD	Life and Health Insurance	52
6 BAIC MOTOR CORPORATION LIMITED	Automobile Manufacturers	50
7 CK HUTCHISON HOLDINGS LIMITED	Industrial Conglomerates	46
8 ALUMINUM CORPORATION OF CHINA	Aluminum	46
9 SHANDONG HEAVY INDUSTRY GROUP CO.,LTD	Auto Parts and Equipment	46
10 HISENSE HOME APPLIANCES GROUP CO.,LTD.	Household Appliances	46
11 BAIDU INCORPORATED	Interactive Media and Services	45
12 ZHEJIANG GEELY HOLDING GROUP CO.,LTD.	Automobile Manufacturers	45
13 SHENZHEN MINGDE HOLDINGS DEVELOPMENT CO., LTD.	Air Freight and Logistics	44
14 CHINA ELECTRONIC TECHNOLOGY GROUP CORPORATION	Aerospace and Defense	44
15 HAIER SMART HOME CO., LTD.	Household Appliances	43
16 BEIJING FINANCIAL STREET CAPITAL OPERATION CENTER	Real Estate Development	43
17 ZTE CORPORATION	Communications Equipment	41
18 HANGZHOU HIKVISION DIGITAL TECHNOLOGY CO., LTD.	Electronic Equipment and Instruments	41
19 NEW WORLD DEVELOPMENT COMPANY LIMITED	Diversified Real Estate Activities	41
20 MIDEA GROUP CO.,LTD.	Household Appliances	40
	From United States	
1 INTERNATIONAL BUSINESS MACHINES CORP	Professional, Scientific, and Technical Services	92
2 PHILIP MORRIS INTERNATIONAL INC.	Manufacturing	90
3 MARSH & MCLENNAN COMPANIES INC	Finance and Insurance	89
4 PEPSICO INC	Manufacturing	89
5 CISCO SYSTEMS INC	Manufacturing	89
6 MONDELEZ INTERNATIONAL, INC.	Manufacturing	88
7 ECOLAB INC	Construction	87
8 UBER TECHNOLOGIES, INC.	Information	86
9 COCA-COLA COMPANY (THE)	Manufacturing	84
10 ABBOTT LABORATORIES	Manufacturing	83
11 JONES LANG LASALLE INC	Real Estate Rental and Leasing	83
12 CORTEVA, INC	Wholesale Trade	82
13 IQVIA HOLDINGS INC.	Professional, Scientific, and Technical Services	82
14 PROCTER & GAMBLE CO	Manufacturing	81
15 COLGATE PALMOLIVE CO	Manufacturing	80

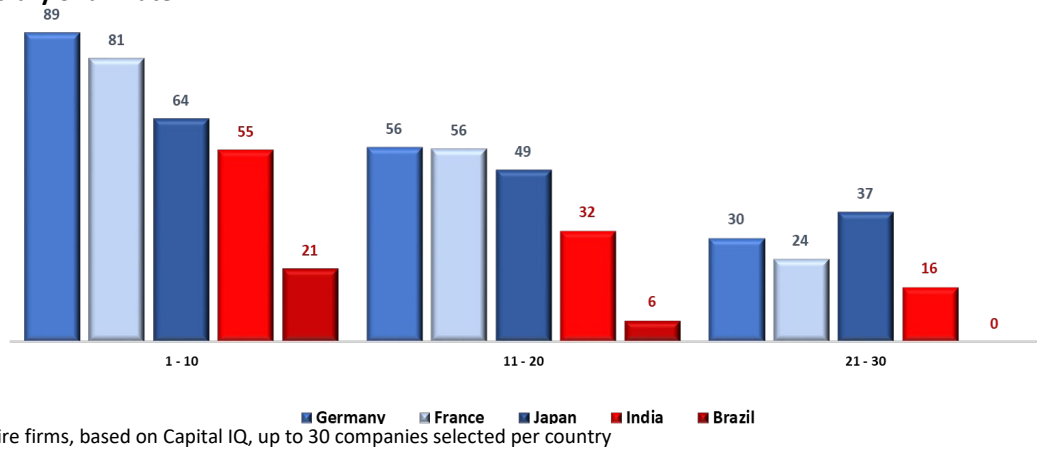
[4] The numbers refer to the countries in which the parent company has subsidiaries or affiliates following the 10 levels offered by ORBIS. Orbis concept of *subsidiary* makes no reference to the percentage of ownership, if Company A is recorded as having a stake in Company B with a very small, or even an unknown percentage of ownership, Company B is said to be a *subsidiary* of Company A. Others would call such a company an *"affiliated company"*. However, "affiliations" may concern links with shareholders too. For this reason, Orbis prefers to call *subsidiary* rather than affiliate any company in which a parent owns a stake, *whatever its percentage of ownership*.
Regarding the subsidiary levels, subsidiaries can be unfolded to 10 levels. The percentage displayed for each level is relative to the subsidiary at the level above. This means that only the percentages displayed for the first level subsidiaries are relative to the subject company itself..

16 TD SYNNEX CORP	Wholesale Trade	80
17 JOHNSON & JOHNSON	Manufacturing	80
18 PFIZER INC	Manufacturing	77
19 DXC TECHNOLOGY COMPANY	Professional, Scientific, and Technical Services	76
20 MICROSOFT CORPORATION	Information	75

Source: EMI research team based on Orbis (https://orbis.bvdinfo.com/), accessed October 2022. Industry classification we used the NAICS.

Approximately the gap is of about 30 countries between each pair of the 20 most international multinationals in China and the U.S. (e.g., number 20 on the U.S. list, International Flavors & Fragrances, was present in 33 more countries than number 20 on the Chinese list, Zhongxingxin Telecom), except for Huawei (Table 2.2). Having been pursuing an aggressive global expansion over the past years, Huawei has managed to connect the world. This Chinese technology multinational now has subsidiaries in 88 countries, 13 more than Microsoft (Table 2.2). Studies have revealed that Huawei has overcome the common obstacles faced by Chinese firms in their internationalization process, including the lack of supply chain efficiency and fragmented business systems, by forming global partnerships (Xing & Huo, 2014). An example was its collaboration with IBM, which supplied Huawei with supply chain technology and chips as well as advised it on how to expand into unfamiliar markets in the Western world (Thomas, 2012). In recent years, Huawei has been pursuing localized customization and R&D-centered operations to remain competitive in the higher end of global markets. Since 2019 when the U.S. President Trump imposed a trade ban on Huawei, the sales of Huawei smartphones outside China have fallen but the telecom equipment division remains global (see Table 2.3).

Figure 2.5. Number of countries where the thirty largest companies* from Germany, France, Japan, India, and Brazil have at least one subsidiary or affiliate



*Sample of billionaire firms, based on Capital IQ, up to 30 companies selected per country
Source: EMI research team based on Orbis (https://orbis.bvdinfo.com/), accessed between September and October 2022

Multinationals in Germany and France (Figure 2.5) have been actively pursuing internationalization, with firms in the group of the ten most internationalized firms, outperforming their U.S. counterparts. Indian multinationals, while not as globally represented as developed players, also saw a high international presence compared to other E20 countries. Brazilian multinationals have a very limited international footprint, with its most internationalized 10-company group being present in 21 countries on average.

Table 2.3. Twenty most international companies by the total number of countries where the company has at least a foreign subsidiary or affiliate 2022

Company	Country	Industry (NAICS)	No. of countries
1 DEUTSCHE POST AG	Germany	Transportation and Warehousing	145
2 A P MOLLER-MAERSK A/S	Denmark	Transportation and Warehousing	125
3 NESTLE S.A.	Switzerland	Manufacturing	119
4 BRITISH AMERICAN TOBACCO PLC	United Kingdom	Manufacturing	119
5 TOYOTA MOTOR CORPORATION	Japan	Manufacturing	115
6 KUEHNE + NAGEL INTERNATIONAL AG	Switzerland	Transportation and Warehousing	109
7 UNILEVER PLC	United Kingdom	Manufacturing	108
8 DSV A/S	Denmark	Transportation and Warehousing	106
9 TOTALENERGIES SE	France	Mining	99
10 ORANGE	France	Information	99
11 BAYER AG	Germany	Manufacturing	93
12 ROCHE HOLDING AG	Switzerland	Manufacturing	92
13 INTERNATIONAL BUSINESS MACHINES CORP	United States	Professional, Scientific, and Technical Services	92
14 CMA CGM	France	Retail Trade	92
15 PHILIP MORRIS INTERNATIONAL INC.	United States	Manufacturing	90
16 BASF SE	Germany	Manufacturing	90
17 VOLKSWAGEN AG	Germany	Manufacturing	89
18 PEPSICO INC	United States	Manufacturing	89
19 MARSH & MCLENNAN COMPANIES INC	United States	Finance and Insurance	89
20 ABB LTD	Switzerland	Manufacturing	89
21 CISCO SYSTEMS INC	United States	Manufacturing	89
22 MONDELEZ INTERNATIONAL, INC.	United States	Manufacturing	88

23 HUAWEI INVESTMENT & HOLDING CO., LTD	China	Information	88
24 ECOLAB INC	United States	Construction	87
25 UBER TECHNOLOGIES, INC.	United States	Information	86
26 LINDE PLC	United Kingdom	Manufacturing	86
27 SIEMENS AG	Germany	Manufacturing	86
28 QUINENCO S.A.	Chile	Finance and Insurance	85
29 ANHEUSER-BUSCH INBEV SA/NV	Belgium	Manufacturing	85
30 ALLIANZ SE	Germany	Finance and Insurance	85

Source: EMI research team based on Orbis (https://orbis.bvdinfo.com/), accessed between September and October 2022

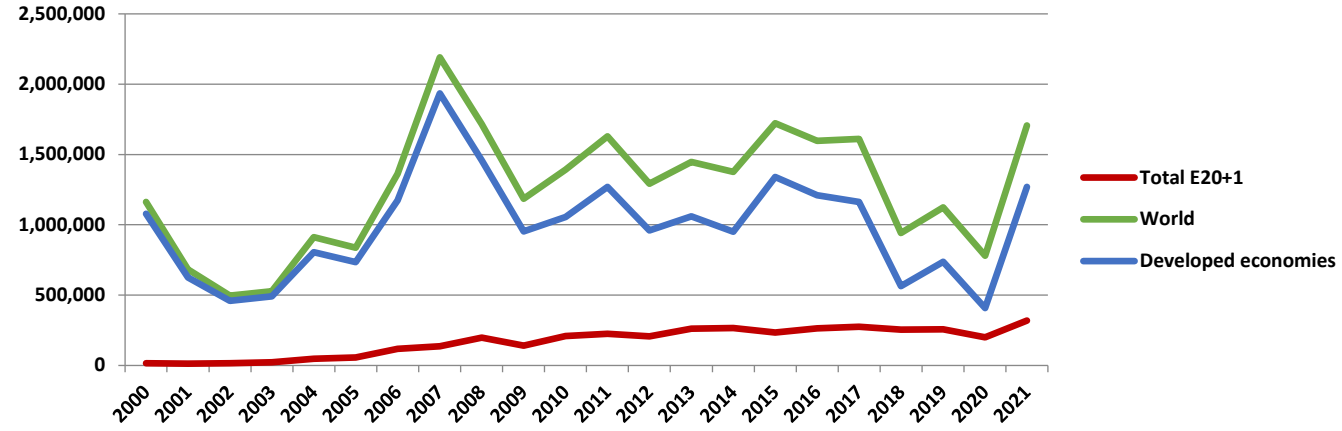
Unsurprisingly, European companies topped the list of the most internationalized billionaire companies (see next section) in the world. The most internationalized American company was ranked 13th (IBM). The only EMNC on the list was Huawei, ranked 22nd (Table 2.3). Geopolitical factors need to be considered in interpreting this table, e.g., the size of European countries, the geographical proximity and interdependency of resources among them, and the role of the European Union. In the next sections we will explore the overall Foreign Direct Investment data (OFDI).

2.2. Emerging Markets advance in attracting investment while Outward Foreign Investment (OFDI) remains the domain of developed countries[5]

In 2021, the total OFDI flows in the world were USD 1.7 trillion. Although we observe and increase in OFDI from emerging economies since the Global Financial Crisis, the developed countries are the ones investing the most internationally (Figure 2.6). However, the global OFDI landscape is changing. In 2019 and 2020, China was respectively the third and first global investor, it ranked fourth in 2021 (Figure 2.8). In 2021, Russia, Saudi Arabia and Thailand are also among the twenty countries investing the most outside.

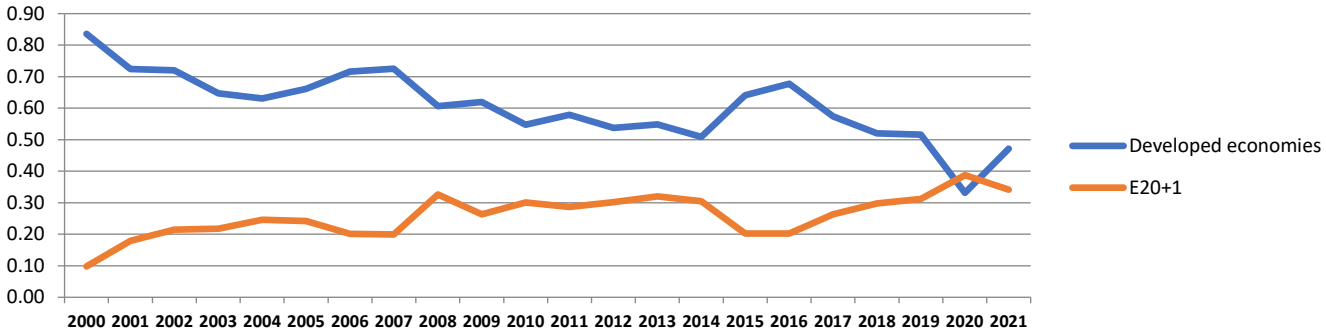
Emerging Markets are in need capital for their development and concentrate on policies to attract foreign investment (Figure 2.7). These policies have been so successful that we can see how the lines converge and in 2020, E20+1 countries attracted more investment flows than developed countries. In 2021 the tendency reversed but, nevertheless, we expect the gap between advanced and emerging economies to remain low.

Figure 2.6. OFDI Flows (in USD millions), 2000-2021



Source: EMI research team based on UNCTAD Stat (http://unctadstat.unctad.org/) accessed in November 2022.

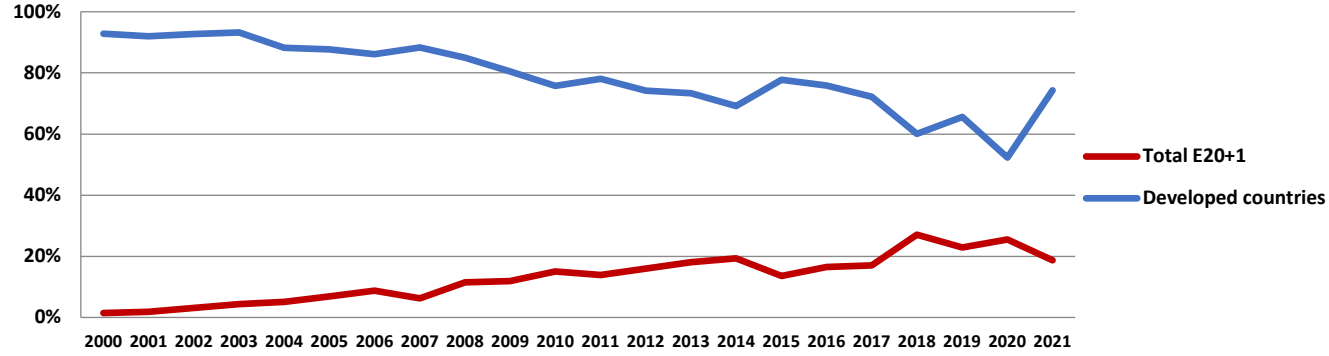
Figure 2.7. Share in global inward FDI flows (% of total), 2000-2021



Source: EMI research team based on UNCTAD Stat (http://unctadstat.unctad.org/) accessed in November 2022.

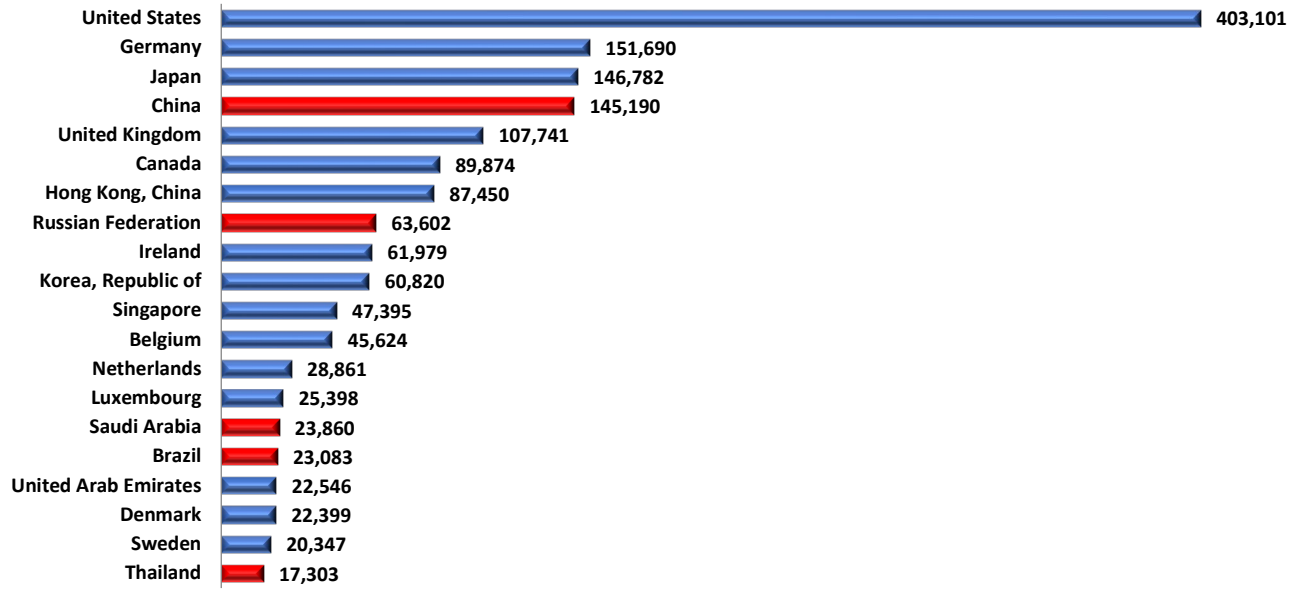
[5] In this section to avoid double counting related issues Hong Kong and China are considered separately.

Figure 2.8. Share in global Outward FDI (OFDI) flows (% of total), 2000-2021



Source: EMI research team based on UNCTAD Stat (http://unctadstat.unctad.org/) accessed in November 2022.

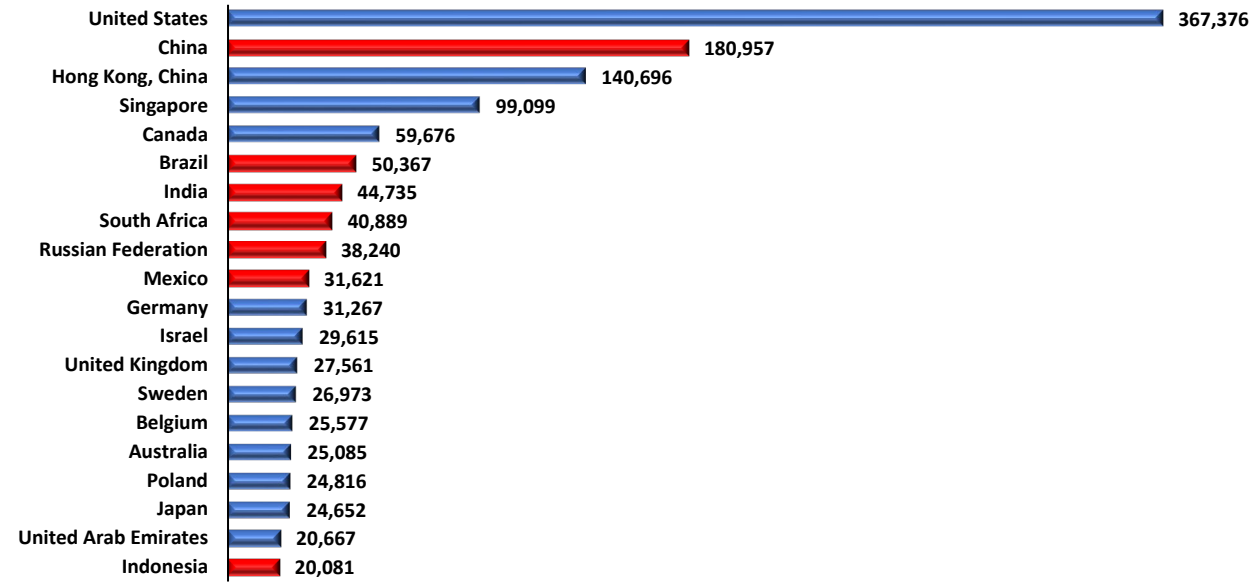
Figure 2.9. OFDI 2021 Flows -Top twenty countries 2021



Source: EMI research team based on UNCTAD Stat (http://unctadstat.unctad.org/) accessed in November 2022.

As individual countries, Emerging Markets success in attracting FDI is clear (Figure 2.9). China is number two, Brazil number five followed by India, South Africa, Russia and Mexico and Indonesia number twenty.

Figure 2.10. Top twenty countries in IFDI 2021 Flows



Source: EMI research team based on UNCTAD Stat (http://unctadstat.unctad.org/) accessed in November 2022.

There are two main ways of investing abroad: one is greenfield (new projects managed directly by the investing company or expansion of old investments) and Mergers and Acquisitions (M&A, when a company merges or buys another one outside its home country). We will explore how Emerging Markets are active mainly in greenfield investments and we will also examine their participation in Mergers and Acquisitions (M&A).

2.3. U.S. dominates greenfield investments, but Emerging Countries continue to increase their international projects

In the last ten years, U.S. companies continue to lead Greenfield investments followed by China (Table 2.4). However, in 2021 China fell to number three after U.S. and Germany and in 2022 to number five after the U.S., U.K., United Arab Emirates and Germany. It remains to be seen if, considering China's 'self-reliance' policies, Chinese companies will turn inwards or will continue to be present internationally.

Table 2.4. Total value of announced greenfield projects per country of origin: 2011 to 2022, and 2018-2022 (USD million)

	Country	Region	Total Invested (2011-2022)	2018	2019	2020	2021	2022
1	United States	North America	**1,609,355**	186,054	139,213	100,957	176,823	159,874
2	China	East Asia & Pacific	**769,676**	100,672	69,618	48,538	37,441	38,841
3	Germany	Europe & Central Asia	**646,219**	73,864	70,078	36,650	60,150	55,436
4	Japan	East Asia & Pacific	**565,790**	61,838	47,334	30,401	25,996	40,551
5	United Kingdom	Europe & Central Asia	**525,052**	45,749	47,834	35,622	36,960	80,980
6	France	Europe & Central Asia	**445,542**	52,408	41,617	35,742	28,857	62,065
7	Korea, Rep.	East Asia & Pacific	**316,368**	31,083	31,059	8,948	32,607	30,386
8	United Arab Emirates	Middle East & North Africa	**258,466**	27,349	14,565	5,788	15,019	76,542
9	Singapore	East Asia & Pacific	**245,645**	29,713	36,651	15,994	17,754	14,478
10	Spain	Europe & Central Asia	**245,131**	22,157	25,620	21,046	21,469	20,674
11	Canada	North America	**233,223**	18,801	19,253	16,679	18,723	23,958
12	Netherlands	Europe & Central Asia	**213,209**	45,166	23,504	16,887	19,601	20,741
13	Taiwan, China	East Asia & Pacific	**209,923**	34,377	6,453	28,721	15,084	43,149
14	Italy	Europe & Central Asia	**203,347**	23,854	10,971	11,084	14,264	21,264
15	Switzerland	Europe & Central Asia	**190,888**	18,329	24,615	15,076	11,642	15,986
16	India	South Asia	**179,282**	9,961	7,739	3,558	11,017	35,194
17	Australia	East Asia & Pacific	**138,049**	12,870	10,553	3,669	15,175	27,113
18	Russian Federation	Europe & Central Asia	**116,822**	11,019	7,089	1,790	2,616	901
19	Denmark	Europe & Central Asia	**112,911**	7,763	8,038	6,303	9,498	21,183
20	Sweden	Europe & Central Asia	**90,398**	6,714	9,554	10,699	8,094	13,756
21	Saudi Arabia	Middle East & North Africa	**87,187**	4,059	9,878	3,108	2,281	22,637
22	Malaysia	East Asia & Pacific	**85,151**	6,458	1,958	1,667	1,834	4,173
23	Thailand	East Asia & Pacific	**81,845**	14,821	9,930	1,972	1,339	598
24	Norway	Europe & Central Asia	**79,263**	4,466	7,810	15,114	5,197	12,756
25	Belgium	Europe & Central Asia	**78,215**	8,141	5,070	5,608	7,797	14,989
26	Ireland	Europe & Central Asia	**69,239**	4,881	10,192	4,414	5,184	8,051
27	Luxembourg	Europe & Central Asia	**65,343**	7,505	7,455	4,386	5,207	14,345
28	Austria	Europe & Central Asia	**64,117**	8,943	4,979	4,405	6,724	5,431
29	South Africa	Sub-Saharan Africa	**60,312**	4,114	2,666	3,101	2,716	1,387
30	Finland	Europe & Central Asia	**56,723**	2,969	6,170	3,052	3,177	4,172

Red: E20+1, Blue: G7

Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

If we consider the E20 + 1 countries alone, all are engaged in greenfield projects but Bangladesh (Table 2.5).

Table 2.5. Total value of E20+1 announced greenfield projects: January 2011 to November 2022, and 2018-2022 (USD million)

	Country	Region	Total Invested (2011-2022)	2018	2019	2020	2021	2022
1	China	East Asia & Pacific	**769,676**	100,672	69,618	48,538	37,441	38,841
2	India	South Asia	**179,282**	9,961	7,739	3,558	11,017	35,194
3	Russian Federation	Europe & Central Asia	**116,822**	11,019	7,089	1,790	2,616	901
4	Saudi Arabia	Middle East & North Africa	**87,187**	4,059	9,878	3,108	2,281	22,637
5	Malaysia	East Asia & Pacific	**85,151**	6,458	1,958	1,667	1,834	4,173
6	Thailand	East Asia & Pacific	**81,845**	14,821	9,930	1,972	1,339	598
7	South Africa	Sub-Saharan Africa	**60,312**	4,114	2,666	3,101	2,716	1,387
8	Mexico	Latin America & Caribbean	**43,487**	4,811	7,271	1,979	1,937	3,100
9	Turkiye	Europe & Central Asia	**43,281**	3,529	6,118	3,258	2,967	2,170
10	Brazil	Latin America & Caribbean	**35,841**	5,053	2,674	1,427	2,977	1,743
11	Indonesia	East Asia & Pacific	**35,150**	898	24,655	31	287	943
12	Azerbaijan	Europe & Central Asia	**25,048**	7,180	105	270	206	96
13	Philippines	East Asia & Pacific	**20,631**	7,739	1,197	1,156	355	2,810
14	Vietnam	East Asia & Pacific	**19,703**	970	426	153	557	4,449
15	Chile	Latin America & Caribbean	**17,224**	2,408	1,997	1,280	1,012	3,361
16	Morocco	Middle East & North Africa	**15,813**	1,052	3,299	86	1,452	139
17	Nigeria	Sub-Saharan Africa	**11,394**	285	2,953	262	693	558
18	Egypt, Arab Rep.	Middle East & North Africa	**9,349**	809	240	314	188	294
19	Argentina	Latin America & Caribbean	**8,889**	1,682	799	639	590	1,490
20	Ukraine	Europe & Central Asia	**7,807**	2,888	30	72	42	991
21	Colombia	Latin America & Caribbean	**6,520**	225	1,043	404	746	526
22	Oman	Middle East & North Africa	**6,372**	349	405	139	12	639
23	Iran, Islamic Rep.	Middle East & North Africa	**4,902**	394	351		19	4
24	Kenya	Sub-Saharan Africa	**4,775**	378	167	128	592	271
25	Peru	Latin America & Caribbean	**3,131**	275	228	110	291	145
26	Pakistan	South Asia	**2,770**	45	680	111	120	83
27	Belarus	Europe & Central Asia	**2,571**	204	88	54	155	27
28	Bulgaria	Europe & Central Asia	**2,556**	80	80	200	124	290
29	Romania	Europe & Central Asia	**2,360**	150	113	216	179	507
30	Jordan	Middle East & North Africa	**2,280**	159	59	10	9	56

Red: E20+1

Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.6. Total value of announced greenfield projects per destination country: 2011 - 2022, and 2018-2022 (USD million)

	Country	Region	Total Received (2011-2022)	2018	2019	2020	2021	2022
1	United States	North America	**902,918**	75,437	94,855	61,223	86,991	150,354
2	China	East Asia & Pacific	**738,134**	111,996	52,792	30,755	27,826	15,772
3	United Kingdom	Europe & Central Asia	**511,203**	34,544	33,611	37,433	56,433	89,084
4	India	South Asia	**472,291**	58,002	35,367	23,411	15,625	75,397
5	Mexico	Latin America & Caribbean	**289,815**	27,109	25,067	12,595	19,026	31,982
6	Egypt, Arab Rep.	Middle East & North Africa	**267,679**	12,329	11,761	1,377	5,393	103,918
7	Brazil	Latin America & Caribbean	**246,386**	18,463	32,747	17,155	22,715	16,946
8	Vietnam	East Asia & Pacific	**226,971**	29,212	37,485	10,577	11,301	6,212
9	Indonesia	East Asia & Pacific	**219,930**	22,475	13,629	20,096	8,109	6,524
10	Australia	East Asia & Pacific	**217,325**	20,573	32,128	18,607	11,269	24,813
11	Canada	North America	**212,063**	49,471	11,215	15,296	19,518	17,348
12	Germany	Europe & Central Asia	**207,340**	19,002	23,815	24,379	40,667	17,731
13	Spain	Europe & Central Asia	**182,101**	32,042	19,046	11,724	27,906	32,582
14	Russian Federation	Europe & Central Asia	**165,647**	17,103	21,971	7,319	14,410	258
15	Malaysia	East Asia & Pacific	**155,607**	13,207	8,928	7,049	24,739	15,823
16	Poland	Europe & Central Asia	**148,406**	15,749	19,774	18,592	18,376	16,389
17	France	Europe & Central Asia	**140,026**	18,055	16,731	14,317	12,570	17,798
18	Singapore	East Asia & Pacific	**139,635**	15,468	6,657	6,195	13,054	14,483
19	Saudi Arabia	Middle East & North Africa	**118,164**	15,291	12,270	9,897	9,159	11,983
20	Japan	East Asia & Pacific	**105,268**	11,585	8,296	7,459	21,521	4,945
21	Ireland	Europe & Central Asia	**103,740**	11,992	10,133	9,950	8,391	21,389
22	United Arab Emirates	Middle East & North Africa	**103,039**	10,733	11,890	8,245	6,101	9,379
23	South Africa	Sub-Saharan Africa	**101,742**	7,188	5,306	5,201	5,704	23,075
24	Netherlands	Europe & Central Asia	**96,737**	10,908	9,113	6,419	8,318	7,280
25	Turkiye	Europe & Central Asia	**88,763**	15,955	3,665	1,999	4,139	2,871
26	Korea, Rep.	East Asia & Pacific	**88,206**	8,329	3,564	3,623	4,222	11,843
27	Philippines	East Asia & Pacific	**84,681**	22,353	11,994	1,362	1,263	2,813
28	Chile	Latin America & Caribbean	**84,322**	8,067	7,673	5,309	5,021	5,142
29	Kazakhstan	Europe & Central Asia	**78,436**	7,618	5,990	847	714	310
30	Italy	Europe & Central Asia	**75,335**	5,376	5,861	6,424	16,620	18,046

Red: E20+1, Blue: G7

Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

Although on several occasions during the previous decade, China became the main destination of greenfield projects (Casanova and Miroux 2020), overall, the U.S. maintained its leadership (Table 2.6 and Table 2.7) as the origin and main destination of announced greenfield investments over 2011-2022. Latin America's aggressive policies to attract FDI have proven to be successful and Mexico at number three and Brazil at number five consistently appear among the most attractive investment destinations. We can observe the reinvention of global value chains and countries like Egypt, Vietnam (a newcomer in the E20 group) or Indonesia have gone up as investment destinations.

Table 2.7. Total value of announced greenfield projects per E20+1 destination country: 2011 - 2022, and 2018-2022 (USD million

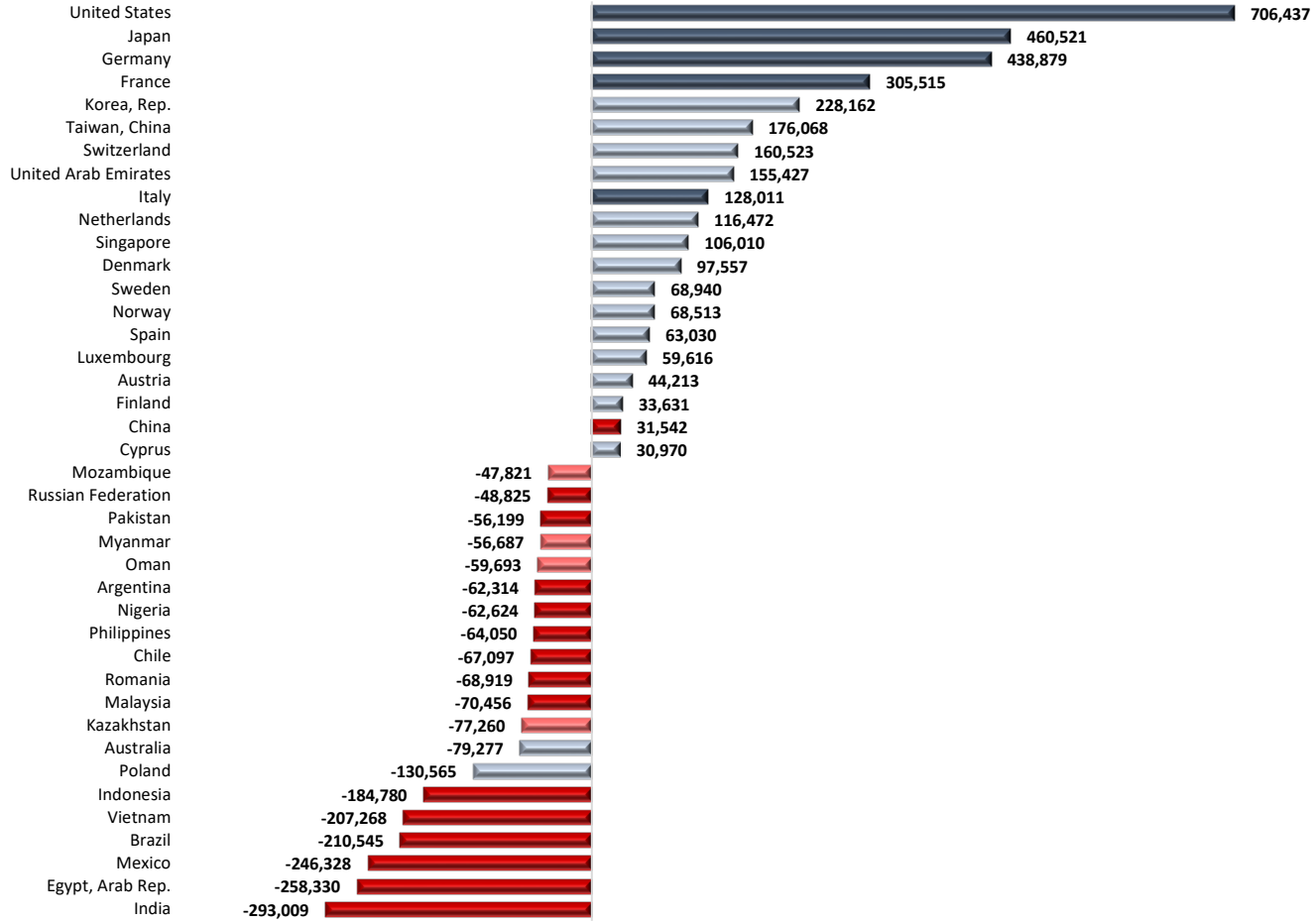
	Country	Region	Total Invested (US$ bn)	2018	2019	2020	2021	2022
1	China	East Asia & Pacific	**738,134**	111,996	52,792	30,755	27,826	15,772
2	India	South Asia	**472,291**	58,002	35,367	23,411	15,625	75,397
3	Mexico	Latin America & Caribbean	**289,815**	27,109	25,067	12,595	19,026	31,982
4	Egypt, Arab Rep.	Middle East & North Africa	**267,679**	12,329	11,761	1,377	5,393	103,918
5	Brazil	Latin America & Caribbean	**246,386**	18,463	32,747	17,155	22,715	16,946
6	Vietnam	East Asia & Pacific	**226,971**	29,212	37,485	10,577	11,301	6,212
7	Indonesia	East Asia & Pacific	**219,930**	22,475	13,629	20,096	8,109	6,524
8	Russian Federation	Europe & Central Asia	**165,647**	17,103	21,971	7,319	14,410	258
9	Malaysia	East Asia & Pacific	**155,607**	13,207	8,928	7,049	24,739	15,823
10	Saudi Arabia	Middle East & North Africa	**118,164**	15,291	12,270	9,897	9,159	11,983
11	South Africa	Sub-Saharan Africa	**101,742**	7,188	5,306	5,201	5,704	23,075
12	Turkiye	Europe & Central Asia	**88,763**	15,955	3,665	1,999	4,139	2,871
13	Philippines	East Asia & Pacific	**84,681**	22,353	11,994	1,362	1,263	2,813
14	Chile	Latin America & Caribbean	**84,322**	8,067	7,673	5,309	5,021	5,142
15	Kazakhstan	Europe & Central Asia	**78,436**	7,618	5,990	847	714	310
16	Nigeria	Sub-Saharan Africa	**74,018**	8,053	10,763	6,462	1,498	1,932
17	Romania	Europe & Central Asia	**71,279**	5,446	5,053	3,273	4,978	8,872
18	Argentina	Latin America & Caribbean	**71,203**	7,417	4,273	3,871	5,651	6,014
19	Thailand	East Asia & Pacific	**67,723**	6,722	4,664	1,933	3,863	7,378
20	Oman	Middle East & North Africa	**66,065**	19,301	3,357	6,089	4,637	7,560
21	Pakistan	South Asia	**58,968**	3,645	3,871	231	911	1,529
22	Myanmar	East Asia & Pacific	**57,109**	5,235	4,514	4,262	149	89
23	Morocco	Middle East & North Africa	**50,734**	4,399	3,205	2,431	1,791	14,154
24	Peru	Latin America & Caribbean	**48,241**	6,311	12,061	1,675	2,126	1,146
25	Mozambique	Sub-Saharan Africa	**47,880**	2,036	842	672	2,457	1,369
26	Nicaragua	Latin America & Caribbean	**44,722**	632	565	295	70	149
27	Colombia	Latin America & Caribbean	**44,530**	4,464	5,348	2,425	4,015	1,582
28	Sri Lanka	South Asia	**42,090**	2,008	25,270	900	439	99
29	Serbia	Europe & Central Asia	**37,319**	5,419	3,773	1,804	1,460	2,930
30	Angola	Sub-Saharan Africa	**36,606**	4,687	2,193	3,406	495	336

Red: E20+1, Blue: G7

Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

Using announced international FDI projects as a proxy, we can observe (Figure 2.9) that countries investing more internationally (more investments abroad than those received) are all 'high-income' (in blue in Figure 2.9) with China being the only emerging country among the E20+1 countries in that league. Latin America (Mexico and Brazil) along with Vietnam and Egypt are part of the countries focused mainly on receiving investments.

Figure 2.11. Balance between source and destination of announced greenfield projects per country, 2011 – 2022



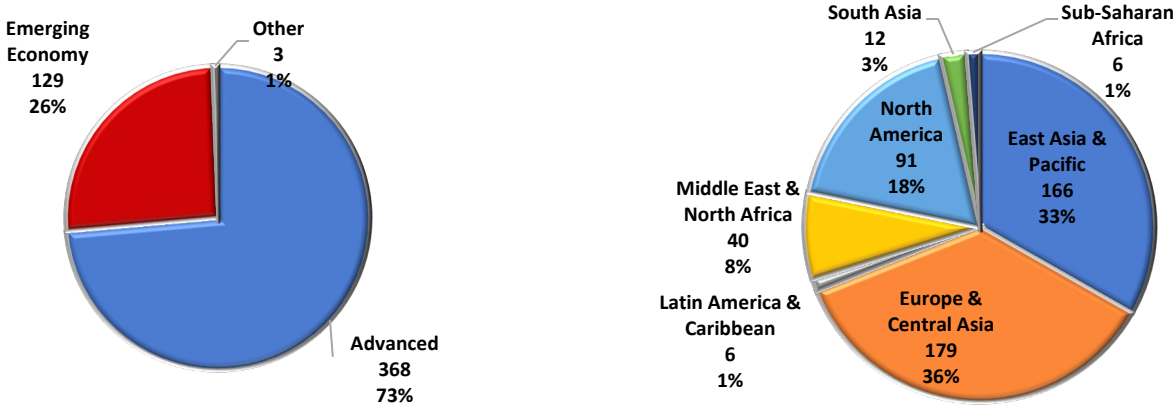
Note: Positive balance: Country is more a source of internationals investments than a destination, Negative: Country is more a destination of investments than a source of internationals investments

Note: Dark red: E20+1, light red: Other Emerging Markets, dark blue: G7, light blue: other advanced

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

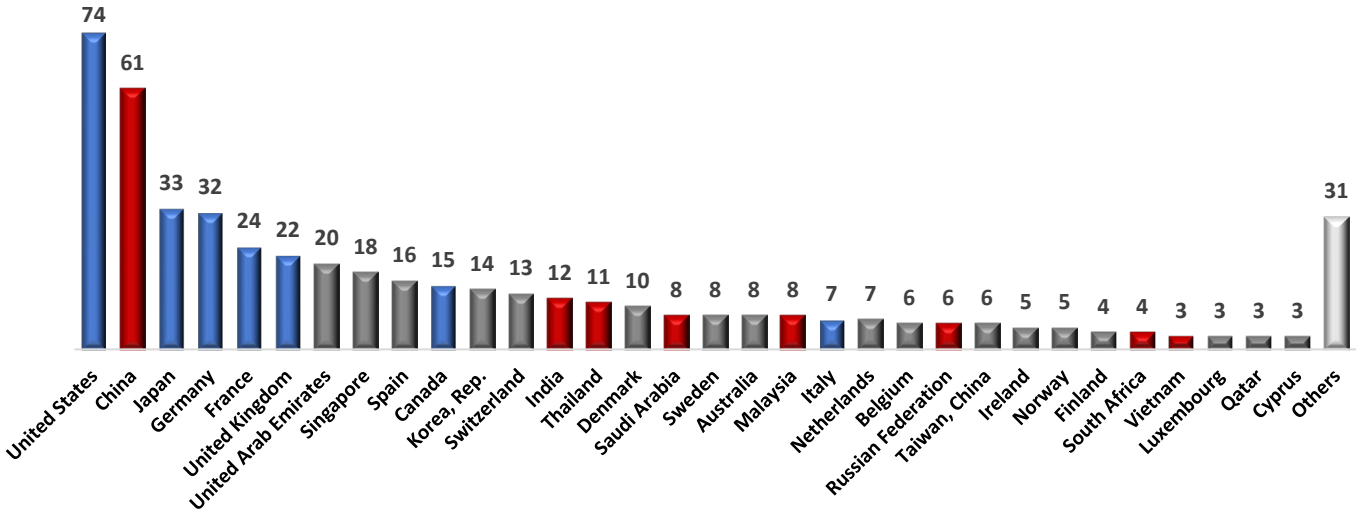
Using announced greenfield investments as a proxy, Figure 2.10 and Figure 2.11 reinforce this idea that companies from advanced economies are the ones investing internationally (Figure 2.10, Figure 2.11 and Figure 2.12). Considering that this is an announced greenfield project, the Hong Kong Nicaragua Canal (Figure 2.9) continues to be the largest announced FDI project from China. However, the project is now on hold. Also, interesting to remark that in the last ten years, the most aggressive company in this category is the Russian Rosatom. All in all, American, European (and Korean) companies dwarf those from E20+1.

Figure 2.12. Number of companies by region among the 500 largest investors by value of announced greenfield projects (Jan 2011 to 2022)



Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 20233

Figure 2.13. Number of companies by country among the 500 largest investors by value of announced greenfield projects (Jan 2011 to Nov end 2022)



Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023

Table 2.8. 50 largest investors by value of announced greenfield projects (2011 - 2022)

	Company Name	Country HQ	Total FDI	2018	2019	2020	2021	2022
1	TotalEnergies (Total)	France	91,881	15,449	3,675	5,468	721	31,434
2	Amazon.com	United States	91,642	9,725	6,405	13,597	19,954	18,065
3	Shell PLC (Royal Dutch Shell)	United Kingdom	67,997	30,308	4,735	7,378	1,556	12,391
4	Intel	United States	67,267	6,303	3,274	843	32,401	13,863
5	Samsung Group	Korea, Rep.	67,265	1,895	2,469	618	18,163	1,808
6	Volkswagen	Germany	63,692	8,628	2,481	3,651	3,936	8,973
7	Exxon Mobil	United States	54,924	21,215	584	0	5,000	4,850
8	Taiwan Semiconductor Manufacturing	Taiwan, China	53,715	3	0	12,004	10,576	28,000
9	Chevron	United States	48,907	0	832	7	0	503
10	Enel	Italy	47,801	4,200	3,999	4,349	6,323	2,688
11	Toyota Motor	Japan	47,087	4,919	8,509	2,005	5,645	730
12	Hyundai Motor	Korea, Rep.	42,826	3,871	5,639	753	2,664	11,560
13	Eni SpA	Italy	42,530	11,687	894	1,385	927	5,475
14	**Rosatom**	**Russian Federation**	**41,922**	**27**	**36**	**33**	**9**	**148**
15	Deutsche Post	Germany	41,128	3,028	3,348	2,434	2,696	3,256
16	**Hong Kong Nicaragua Canal Development Investment (HKND Grou**	**China**	**40,000**	**0**	**0**	**0**	**0**	**0**
17	Hon Hai Precision Industry (Foxconn)	Taiwan, China	39,166	10,037	842	1,536	2,649	3,531
18	Mercedes-Benz Group (Daimler)	Germany	32,866	4,038	1,748	803	356	2,628
19	Government of Singapore Investment Corporation (GIC)	Singapore	32,650	7,318	2,817	1,369	2,288	83
20	Energias de Portugal (EDP)	Portugal	31,993	459	2,022	1,879	4,522	15,956
21	Marubeni	Japan	31,753	4,707	1,055	2,168	1,041	12,330
22	CapitaLand	Singapore	31,727	5,947	1,820	13	1,028	0
23	AP Moller - Maersk	Denmark	30,294	327	517	674	714	13,118
24	Electricite de France (EDF)	France	29,314	2,517	3,910	2,983	3,729	4,610
25	Vedanta Resources	United Kingdom	29,271	839	65	0	335	19,500
26	General Motors (GM)	United States	28,412	529	737	143	3,986	1,398
27	LG	Korea, Rep.	27,566	3,658	5,627	249	2,562	6,696
28	Telefonica	Spain	27,528	1,492	1,734	7,738	498	25
29	Equinor (Statoil)	Norway	27,347	312	4,437	12,759	257	851
30	Goodman Group	Australia	26,961	4,027	2,507	286	2,080	0
31	BASF	Germany	26,859	11,591	820	500	288	707
32	Panattoni	United States	26,589	2,920	4,349	3,745	8,176	4,219
33	**China Fortune Land Development (CFLD)**	**China**	**26,416**	**0**	**0**	**0**	**0**	**0**
34	Fiat Chrysler Automobiles (Fiat)	United Kingdom	26,220	2,261	3,950	2,284	0	0
35	Iberdrola	Spain	25,256	2,434	1,497	2,100	2,768	3,329
36	Mitsui & Co	Japan	24,754	582	941	45	725	1
37	Majid Al Futtaim Group (MAF Group)	United Arab Emirates	24,407	13,635	2,569	16	70	60
38	Bayerische Motoren Werke (BMW)	Germany	24,244	2,999	4,411	2,165	185	5,184
39	**PT Sugih Energy**	**Indonesia**	**24,000**	**0**	**24,000**	**0**	**0**	**0**
40	Qatar Energy (Qatar Petroleum)	Qatar	23,952	9	17,900	0	88	218
41	POSCO (Pohang Iron & Steel)	Korea, Rep.	23,759	1,502	95	0	0	123
42	State Oil Company of Azerbaijan Republic (Socar)	Azerbaijan	23,755	7,119	30	0	117	6
43	Mubadala Investment Company	United Arab Emirates	23,745	2,316	724	477	6,657	11,800
44	Engie (GDF SUEZ) (Gaz de France)	France	23,071	1,384	2,985	3,005	3,039	450
45	URB	United Arab Emirates	22,677	0	0	0	0	22,677
46	General Electric (GE)	United States	22,467	3,746	3,322	291	386	169
47	Ford Motor Company	United States	22,273	593	1,181	2,061	2,737	338
48	**Tata Group**	**India**	**21,379**	**1,364**	**182**	**420**	**927**	**842**
49	Mitsubishi	Japan	21,143	1,100	1,005	1,090	91	3
50	Nissan	Japan	20,707	2,720	1,759	585	871	865

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023

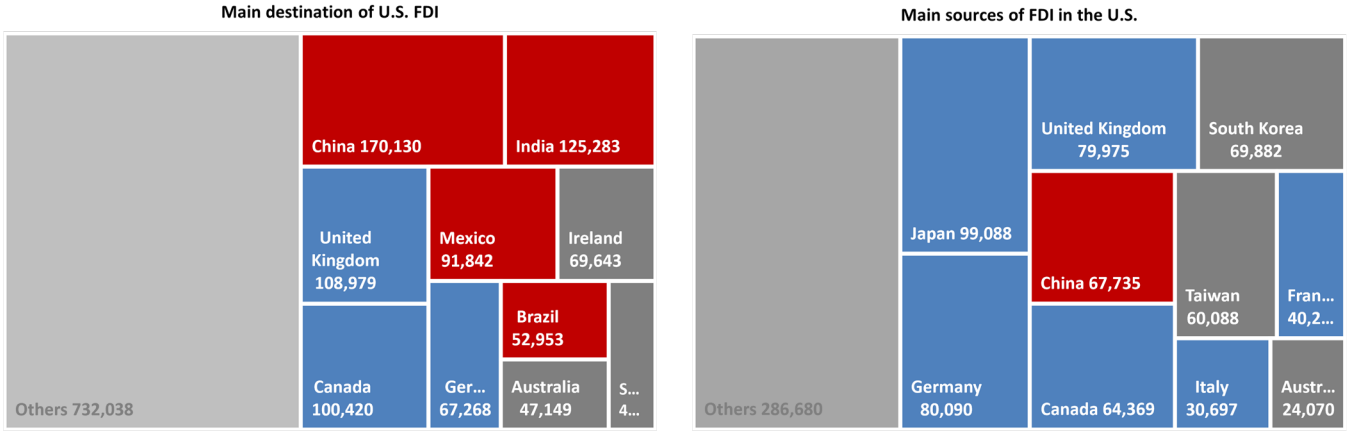
Only six EMNCs (five of those from E20+1) are among the largest 50 biggest companies involved in announced greenfield investments (tables 2.8 and 2.9).

Table 2.9. 50 largest EMNC investors by value (USD million) of announced greenfield projects, per country (2011 - 2022)

	Company Name	Country HQ	Total FDI	2018	2019	2020	2021	2022
1	Rosatom	Russian Federation	41,922	27	36	33	9	148
2	Hong Kong Nicaragua Canal Development Investment (HKND Grou	China	40,000	0	0	0	0	0
3	China Fortune Land Development (CFLD)	China	26,416	0	0	0	0	0
4	PT Sugih Energy	Indonesia	24,000	0	24,000	0	0	0
5	State Oil Company of Azerbaijan Republic (Socar)	Azerbaijan	23,755	7,119	30	0	117	6
6	Tata Group	India	21,379	1,364	182	420	927	842
7	SASOL	South Africa	20,269	0	0	0	0	0
8	Saudi Aramco	Saudi Arabia	19,346	0	37	49	1,322	7,139
9	Huawei Technologies	China	18,204	849	4,330	654	5,160	606
10	ACWA Power International	Saudi Arabia	17,892	803	6,214	1,679	201	3,267
11	Greenland Holdings (Greenland Group)	China	17,521	2	0	0	251	0
12	Zhejiang Hengyi Group	China	17,109	0	0	13,650	0	0
13	ACME Group (ACME Cleantech Solutions)	India	16,500	0	0	0	3,500	13,000
14	Contemporary Amperex Technology (CATL)	China	14,933	2,174	0	5,109	159	7,488
15	Sime Darby	Malaysia	13,605	0	0	0	0	0
16	Lukoil	Russian Federation	13,181	6	0	0	0	0
17	America Movil	Mexico	12,773	1,022	449	163	1,115	0
18	Gazprom	Russian Federation	11,789	3,989	682	5	0	31
19	Sirius Holding	China	11,100	0	11,100	0	0	0
20	Risen Energy	China	10,948	443	52	0	10,100	0
21	Saudi Basic Industries (SABIC)	Saudi Arabia	10,779	318	1	0	0	0
22	Dalian Wanda Group	China	10,708	0	0	0	0	0
23	China National Petroleum (CNPC)	China	10,286	153	364	77	329	0
24	China Communications Construction Company	China	9,992	381	2,607	65	0	0
25	Shanghai Electric	China	9,869	0	95	700	0	0
26	Grupo Mexico	Mexico	8,934	2,500	5,500	0	0	0
27	Jindal Organisation (OP Jindal)	India	8,370	1,468	0	0	0	0
28	CITIC Group	China	8,342	6,457	397	0	0	434
29	Zhejiang Geely Holding Group (Geely Holding Group)	China	8,056	837	1,183	172	370	1,431
30	ReNew Power Ventures	India	8,000	0	0	0	0	8,000
31	Petronas	Malaysia	7,392	2,360	0	0	0	4,015
32	Alibaba Group Holding	China	7,359	1,959	256	623	957	1,885
33	Dangote Group	Nigeria	7,356	89	2,382	75	0	0
34	Essar Group	India	7,336	194	0	0	0	4,000
35	Aditya Birla	India	7,059	813	41	95	668	2,720
36	Office Cherifien des Phosphates (OCP)	Morocco	6,965	829	1,756	16	0	86
37	Genting	Malaysia	6,637	0	0	0	0	0
38	T.H. Group	Vietnam	6,508	258	0	0	0	0
39	Sany	China	6,489	5	0	2	3	0
40	Zendai Group	China	6,400	0	0	0	0	0
41	Pavilion Group	Malaysia	6,360	0	0	0	0	0
42	Power Construction Corporation of China (PowerChina)	China	6,343	0	0	1,599	361	201
43	PTT	Thailand	6,208	0	748	0	0	55
44	China Mobile Communications	China	5,918	312	364	3,337	582	0
45	MTN Group	South Africa	5,863	0	909	2,508	5	5
46	Envision Energy	China	5,854	0	3	1,285	1,012	3,015
47	Fawaz Alhokair Group	Saudi Arabia	5,648	420	1,787	0	0	3,299
48	China State Construction Engineering (CSCEC)	China	5,525	208	331	0	0	73
49	Dusit Thani (Dusit International)	Thailand	5,428	416	4,494	185	0	0
50	China General Technology Group (Genertec)	China	5,389	0	212	3,597	0	0

Source: EMI research team based on Financial times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023

Figure 2.14. Ten main destinations and origins of U.S. announced FDI project by total value (USD million, 2011 – 2022)



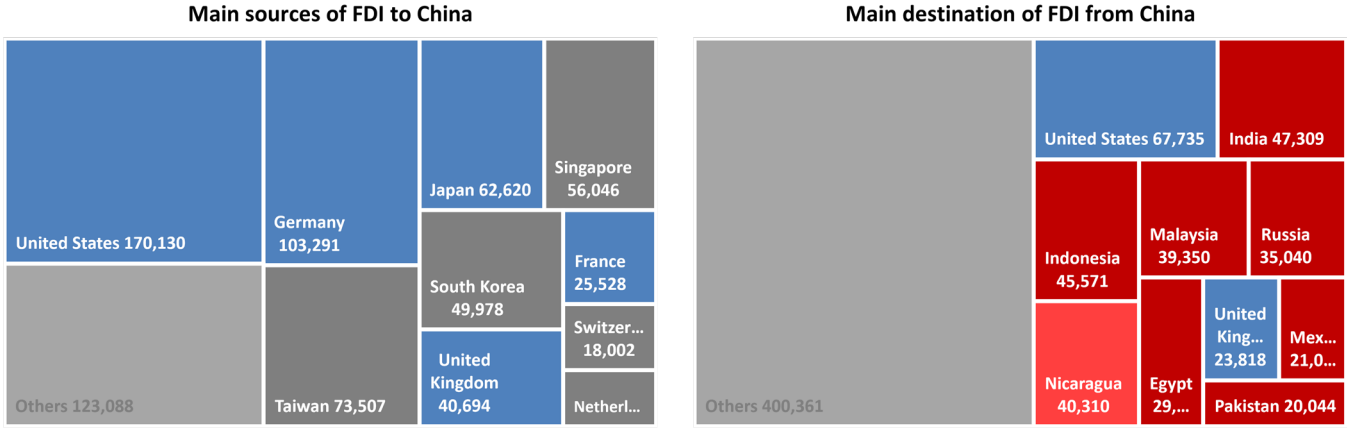
Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.10. Top five U.S. companies of U.S. announced greenfield projects by total value and share of total (USD million 2011 – 2022)

	Company	2011-2014	2015-2018	2019-2022	Total
1	**Amazon.com**	9,032 (1.9%)	24,589 (4.4%)	58,021 (10.1%)	**91,642 (5.7%)**
2	**Intel**	1,447 (0.3%)	15,440 (2.8%)	50,380 (8.7%)	**67,267 (4.2%)**
3	**Exxon Mobil**	17,035 (3.6%)	27,455 (4.9%)	10,434 (1.8%)	**54,924 (3.4%)**
4	**Chevron**	9,344 (2.0%)	38,221 (6.9%)	1,342 (0.2%)	**48,907 (3.0%)**
5	**General Motors (GM)**	15,983 (3.3%)	6,165 (1.1%)	6,264 (1.1%)	**28,412 (1.8%)**

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.15. Ten main destinations and origins of China's announced greenfield projects by total value (USD million, 2011 – 2022)



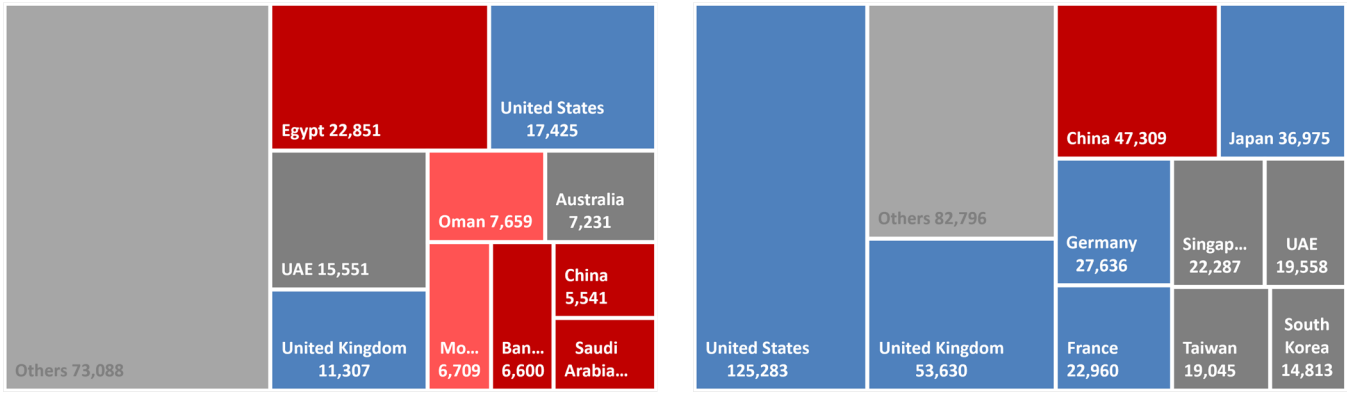
Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.11. Top five Chinese companies by total value of Chinese announced greenfield projects and share of total (USD million, 2011 – 2022)

	Company	2011-2014	2015-2018	2019-2022	Total
1	**Hong Kong Nicaragua Canal Development (HKND Group)**	40,000 (15.4%)	0 (0.0%)	0 (0.0%)	**40,000 (4.8%)**
2	**China Fortune Land Development (CFLD)**	0 (0.0%)	26,416 (7.2%)	0 (0.0%)	**26,416 (3.2%)**
3	**Huawei Technologies**	4,088 (1.6%)	3,516 (1.0%)	10,749 (5.2%)	**18,353 (2.2%)**
4	**Greenland Holdings (Greenland Group)**	16,268 (6.3%)	1,037 (0.3%)	251 (0.1%)	**17,556 (2.1%)**
5	**Zhejiang Hengyi Group**	3,450 (1.3%)	9 (0.0%)	13,650 (6.6%)	**17,109 (2.1%)**

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.16. Ten main destinations and origins by total value of India's announced greenfield projects (USD million, 2011 – 2022)



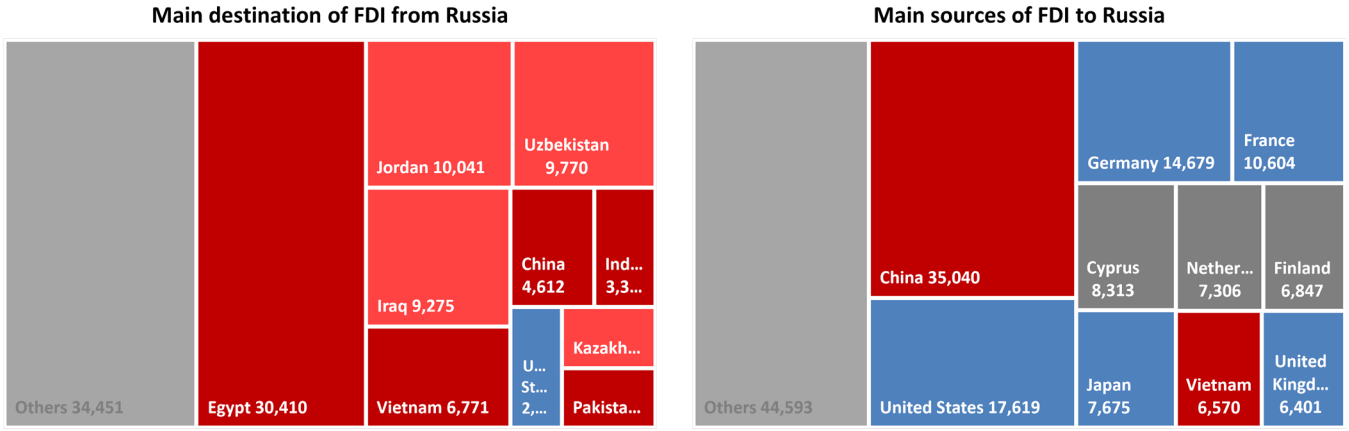
Source: EMI research team based on Financial times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.12. Top five Indian companies by total value of announced greenfield projects and share of total (USD million, 2011 – 2022)

	Company	2011-2014	2015-2018	2019-2022	Total
1	**Tata Group**	11,293 (15.4%)	7,716 (15.9%)	2,371 (4.1%)	**21,379 (11.9%)**
2	**ACME Group (ACME Cleantech Solutions)**	0 (0.0%)	0 (0.0%)	16,500 (28.7%)	**16,500 (9.2%)**
3	**Jindal Organisation (OP Jindal)**	6,382 (8.7%)	1,988 (4.1%)	0 (0.0%)	**8,370 (4.7%)**
4	**ReNew Power Ventures**	0 (0.0%)	0 (0.0%)	8,000 (13.9%)	**8,000 (4.5%)**
5	**Essar Group**	3,347 (4.6%)	244 (0.5%)	4,003 (7.0%)	**7,594 (4.2%)**

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.17. Ten main destinations and origins of Russia's greenfield projects by total value (USD million, 2011 –2022)



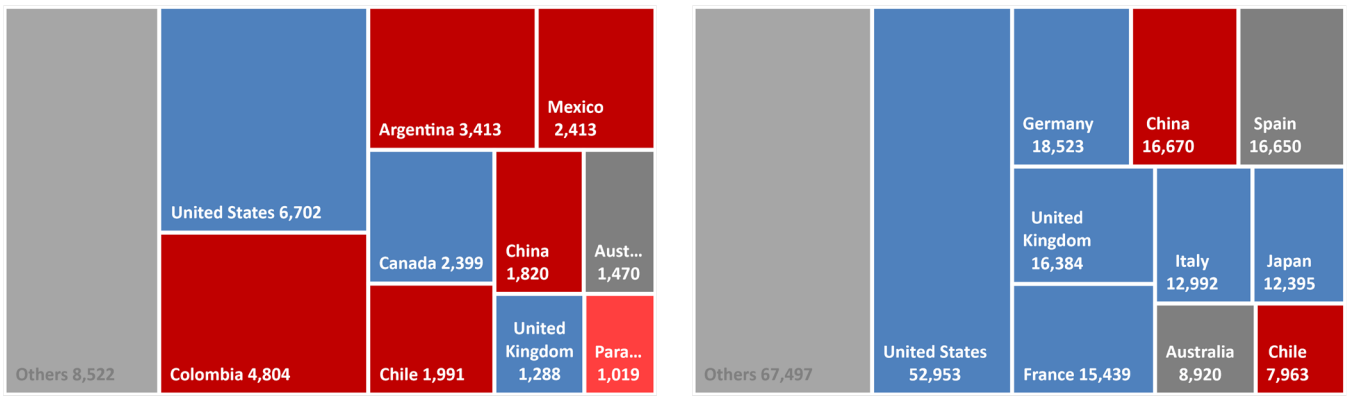
Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.13. Top five Russian companies of announced greenfield projects and share of total, by total value (USD million, 2011 –2022)

	Company	2011-2014	2015-2018	2019-2022	Total
1	**Rosatom**	10,293 (27.2%)	31,403 (47.1%)	227 (1.8%)	**41,922 (35.9%)**
2	**Lukoil**	5,586 (14.8%)	7,595 (11.4%)	0 (0.0%)	**13,181 (11.3%)**
3	**Gazprom**	3,646 (9.6%)	7,426 (11.1%)	717 (5.8%)	**11,789 (10.1%)**
4	**Russian Technologies State Corporation (Rostec)**	222 (0.6%)	4,912 (7.4%)	160 (1.3%)	**5,295 (4.5%)**
5	**Rosneft Oil Company**	666 (1.8%)	2,264 (3.4%)	1,039 (8.4%)	**3,969 (3.4%)**

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.18. Ten main destinations and origins of Brazil's announced greenfield projects by total value (USD million, 2011 – 2022)



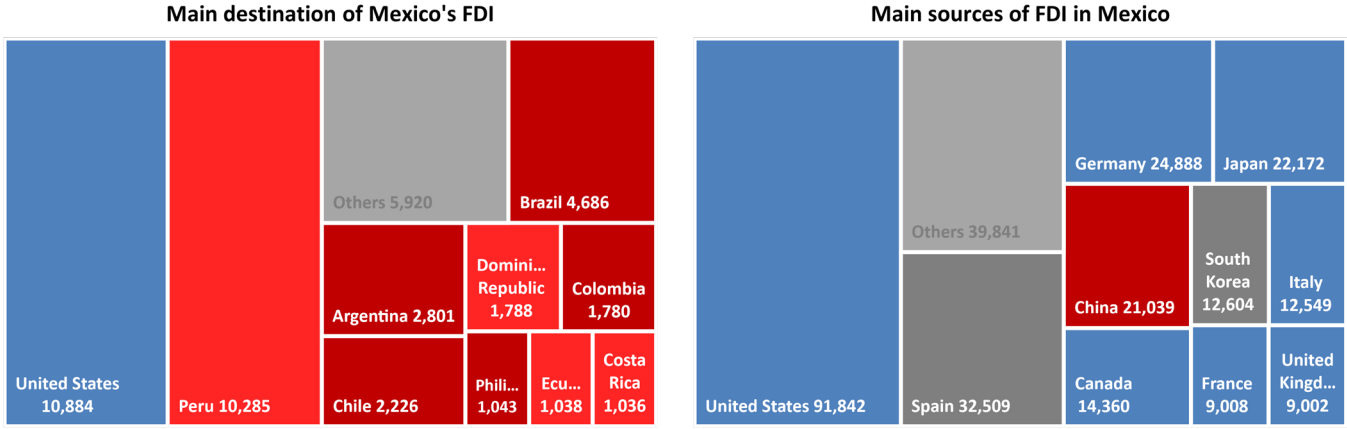
Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.14. Top five Brazilian companies by total value of announced greenfield investments and share of total (USD million, 2011 –2022)

	Company	2011-2014	2015-2018	2019-2022	Total
1	**Hejoassu Administracao (Votorantim)**	4,125 (25.4%)	928 (8.6%)	93 (1.1%)	**5,146 (14.4%)**
2	**Vale (Companhia Vale do Rio Doce)**	2,350 (14.5%)	2,507 (23.2%)	188 (2.1%)	**5,045 (14.1%)**
3	**Novonor (Odebrecht)**	204 (1.3%)	801 (7.4%)	444 (5.0%)	**1,449 (4.0%)**
4	**JBS**	255 (1.6%)	247 (2.3%)	945 (10.7%)	**1,446 (4.0%)**
5	**Gerdau**	1,140 (7.0%)	62 (0.6%)	165 (1.9%)	**1,367 (3.8%)**

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.19. Ten main destinations and origins of Mexico's announced greenfield projects by total value (USD million, 2011 – 2022)



Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.15. Top five Mexican companies by total value of announced greenfield investments and share of total (USD million, 2011 –2022)

	Company	2011-2014	2015-2018	2019-2022	Total
1	**América Móvil**	7,816 (45.6%)	3,231 (26.8%)	1,726 (12.1%)	**12,773 (29.4%)**
2	**Grupo Mexico**	934 (5.5%)	2,500 (20.7%)	5,500 (38.5%)	**8,934 (20.5%)**
3	**Cemex**	999 (5.8%)	892 (7.4%)	469 (3.3%)	**2,361 (5.4%)**
4	**Grupo Empresarial Kaluz**	1,882 (11.0%)	159 (1.3%)	141 (1.0%)	**2,182 (5.0%)**
5	**Gruma**	236 (1.4%)	755 (6.3%)	571 (4.0%)	**1,561 (3.6%)**

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

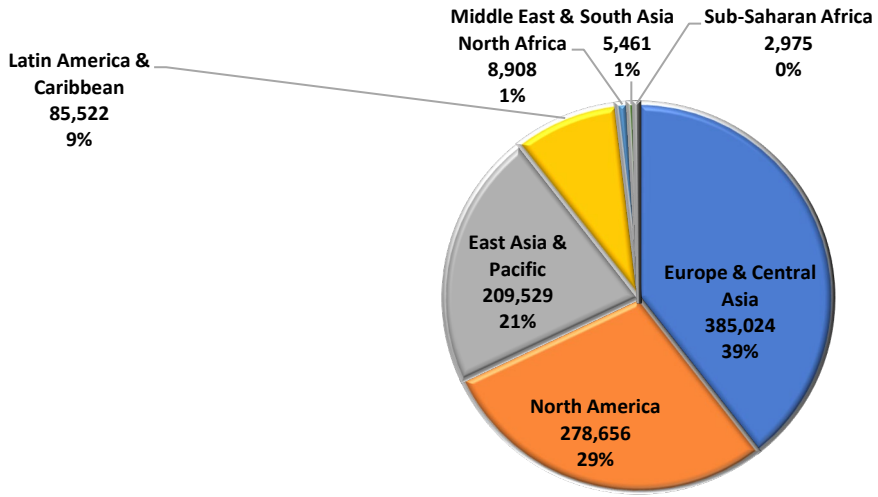
Table 2.16. Main investor countries in announced greenfield projects in Latin America (2011-2022) and share of total in the region in last five years, USD million

	Country	Region	2011-2022*	Last 5 years
1	United States	North America	**215,874 (22.1%)**	88,936 (23.4%)
2	China	East Asia & Pacific	**106,757 (10.9%)**	29,948 (7.9%)
3	Spain	Europe & Central Asia	**98,707 (10.1%)**	35,223 (9.3%)
4	Germany	Europe & Central Asia	**54,947 (5.6%)**	21,963 (5.8%)
5	Canada	North America	**54,807 (5.6%)**	12,809 (3.4%)
6	Japan	East Asia & Pacific	**44,384 (4.5%)**	1,608 (0.4%)
7	United Kingdom	Europe & Central Asia	**43,964 (4.5%)**	11,648 (3.1%)
8	Italy	Europe & Central Asia	**40,732 (4.2%)**	13,202 (3.5%)
9	France	Europe & Central Asia	**37,067 (3.8%)**	14,331 (3.8%)
10	Mexico	Latin America & Caribbean	**27,141 (2.8%)**	18,797 (4.9%)
11	Australia	East Asia & Pacific	**21,222 (2.2%)**	11,565 (3.0%)
12	Korea, Rep.	East Asia & Pacific	**19,753 (2.0%)**	15,277 (4.0%)
13	Switzerland	Europe & Central Asia	**18,783 (1.9%)**	6,545 (1.7%)
14	Netherlands	Europe & Central Asia	**18,080 (1.9%)**	8,254 (2.2%)
15	Chile	Latin America & Caribbean	**15,880 (1.6%)**	9,603 (2.5%)
16	Brazil	Latin America & Caribbean	**15,822 (1.6%)**	9,411 (2.5%)
17	Luxembourg	Europe & Central Asia	**9,349 (1.0%)**	4,122 (1.1%)
18	Ireland	Europe & Central Asia	**9,294 (1.0%)**	6,545 (1.7%)
19	Finland	Europe & Central Asia	**8,582 (0.9%)**	3,931 (1.0%)
20	Bermuda	North America	**7,975 (0.8%)**	3,254 (0.9%)
	Total		**976,076**	**380,518**

Note: Red: E20+1, Blue: G7

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.20. Main origin regions by total value of announced greenfield projects in Latin America, and share of total (2011-2022, USD million)



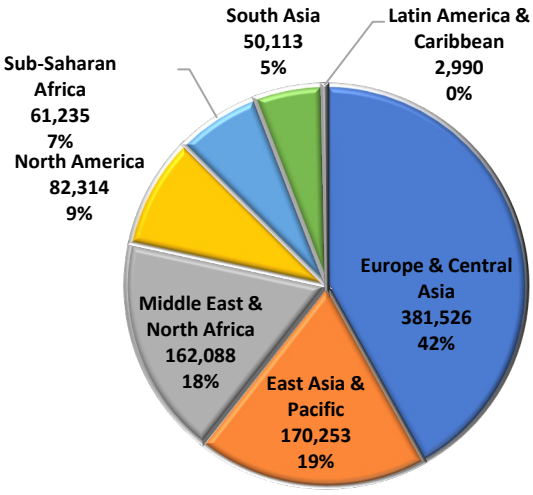
Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.17. Comparison of main investor countries in announced greenfield projects in Africa and share of total in the region, (2011-2022 in USD million)

	Country	Region	2011-2022*	Last 5 years
1	China	East Asia & Pacific	111,540 (12.3%)	39,284 (9.9%)
2	United Arab Emirates	Middle East & North Africa	94,251 (10.4%)	61,780 (15.5%)
3	France	Europe & Central Asia	75,433 (8.3%)	39,495 (9.9%)
4	United States	North America	64,876 (7.1%)	27,492 (6.9%)
5	United Kingdom	Europe & Central Asia	61,939 (6.8%)	32,349 (8.1%)
6	India	South Asia	49,317 (5.4%)	25,232 (6.3%)
7	Italy	Europe & Central Asia	44,293 (4.9%)	16,537 (4.2%)
8	Russian Federation	Europe & Central Asia	35,293 (3.9%)	735 (0.2%)
9	Germany	Europe & Central Asia	26,795 (2.9%)	14,618 (3.7%)
10	Saudi Arabia	Middle East & North Africa	25,829 (2.8%)	15,740 (4.0%)
11	South Africa	Sub-Saharan Africa	24,920 (2.7%)	8,569 (2.2%)
12	Canada	North America	17,247 (1.9%)	5,060 (1.3%)
13	Australia	East Asia & Pacific	16,962 (1.9%)	12,141 (3.1%)
14	Switzerland	Europe & Central Asia	15,965 (1.8%)	5,792 (1.5%)
15	Luxembourg	Europe & Central Asia	15,877 (1.7%)	12,766 (3.2%)
16	Morocco	Middle East & North Africa	14,317 (1.6%)	5,508 (1.4%)
17	Mauritius	Sub-Saharan Africa	14,316 (1.6%)	6,202 (1.6%)
18	Japan	East Asia & Pacific	13,107 (1.4%)	4,277 (1.1%)
19	Norway	Europe & Central Asia	12,265 (1.3%)	7,525 (1.9%)
20	Belgium	Europe & Central Asia	11,848 (1.3%)	6,304 (1.6%)
	Total		**910,520**	**397,739**

Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.21. Main regions investing in announced greenfield projects in Africa and share of total, 2011-2022, USD million



Source: EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.18. Thirty largest companies by total value in announced greenfield projects in Latin America 2011-2014, 2015-2018, 2019-2022 and total in 2011-2022, in USD million

	Company	Country	2011-2014	2015-2018	2019-2022	Total
1	Hong Kong Nicaragua Canal Development Investment (HKND Group)	China	40,000 (10.9%)	0 (0.0%)	0 (0.0%)	**40,000 (4.5%)**
2	Telefonica	Spain	10,812 (2.9%)	5,532 (2.2%)	2,640 (1.0%)	**18,984 (2.2%)**
3	Enel	Italy	4,341 (1.2%)	6,341 (2.6%)	7,023 (2.6%)	**17,704 (2.0%)**
4	General Motors (GM)	United States	7,686 (2.1%)	3,566 (1.4%)	1,842 (0.7%)	**13,094 (1.5%)**
5	Huawei Technologies	China	2,046 (0.6%)	198 (0.1%)	6,444 (2.4%)	**8,688 (1.0%)**
6	Volkswagen	Germany	2,557 (0.7%)	2,691 (1.1%)	2,999 (1.1%)	**8,246 (0.9%)**
7	Iberdrola	Spain	3,025 (0.8%)	3,298 (1.3%)	1,797 (0.7%)	**8,120 (0.9%)**
8	Heineken Holding	Netherlands	513 (0.1%)	1,969 (0.8%)	4,913 (1.8%)	**7,394 (0.8%)**
9	Fiat Chrysler Automobiles (Fiat)	United Kingdom	4,681 (1.3%)	694 (0.3%)	1,999 (0.7%)	**7,374 (0.8%)**
10	UPM-Kymmene	Finland	146 (0.0%)	4,127 (1.7%)	3,005 (1.1%)	**7,277 (0.8%)**
11	Abengoa	Spain	2,810 (0.8%)	4,307 (1.7%)	77 (0.0%)	**7,194 (0.8%)**
12	Hyundai Motor	Korea, Rep.	3,883 (1.1%)	2,787 (1.1%)	292 (0.1%)	**6,963 (0.8%)**
13	Sempra Energy (Sempra Energy Resources)	United States	558 (0.2%)	3,218 (1.3%)	3,057 (1.1%)	**6,833 (0.8%)**
14	First Quantum Minerals	Canada	6,400 (1.7%)	304 (0.1%)	0 (0.0%)	**6,704 (0.8%)**
15	Nissan	Japan	4,413 (1.2%)	783 (0.3%)	1,394 (0.5%)	**6,590 (0.7%)**
16	Toyota Motor	Japan	2,360 (0.6%)	2,736 (1.1%)	1,382 (0.5%)	**6,479 (0.7%)**
17	Mainstream Renewable Power	Ireland	1,960 (0.5%)	1,840 (0.7%)	2,391 (0.9%)	**6,191 (0.7%)**
18	Techint	Italy	2,553 (0.7%)	2,624 (1.1%)	1,000 (0.4%)	**6,177 (0.7%)**
19	Engie (GDF SUEZ) (Gaz de France)	France	1,210 (0.3%)	984 (0.4%)	3,906 (1.5%)	**6,100 (0.7%)**
20	Deutsche Post	Germany	2,890 (0.8%)	1,383 (0.6%)	1,375 (0.5%)	**5,647 (0.6%)**
21	Ford Motor Company	United States	2,568 (0.7%)	1,632 (0.7%)	1,260 (0.5%)	**5,461 (0.6%)**
22	Enegix Energy	Australia	0 (0.0%)	0 (0.0%)	5,423 (2.0%)	**5,423 (0.6%)**
23	Constellation Brands	United States	1,650 (0.4%)	1,860 (0.8%)	1,663 (0.6%)	**5,173 (0.6%)**
24	Telecom Italia	Italy	3,468 (0.9%)	1,026 (0.4%)	647 (0.2%)	**5,141 (0.6%)**
25	AES Corporation (AES)	United States	2,654 (0.7%)	880 (0.4%)	1,559 (0.6%)	**5,093 (0.6%)**
26	AT&T	United States	883 (0.2%)	3,678 (1.5%)	349 (0.1%)	**4,910 (0.6%)**
27	TotalEnergies (Total)	France	229 (0.1%)	2,493 (1.0%)	1,809 (0.7%)	**4,531 (0.5%)**
28	Woodside Energy (Woodside Petroleum)	Australia	0 (0.0%)	0 (0.0%)	4,500 (1.7%)	**4,500 (0.5%)**
29	Goldcorp	Canada	4,117 (1.1%)	300 (0.1%)	0 (0.0%)	**4,417 (0.5%)**
30	Amazon.com	United States	227 (0.1%)	1,086 (0.4%)	3,061 (1.1%)	**4,373 (0.5%)**

Note: Red: E20+1, Blue: G7

Source EMI research team based on Financial Times fDi Markets Library (https://www.fdimarkets.com/) accessed in January 2023.

In the next section we will explore the Mergers and Acquisitions activity.

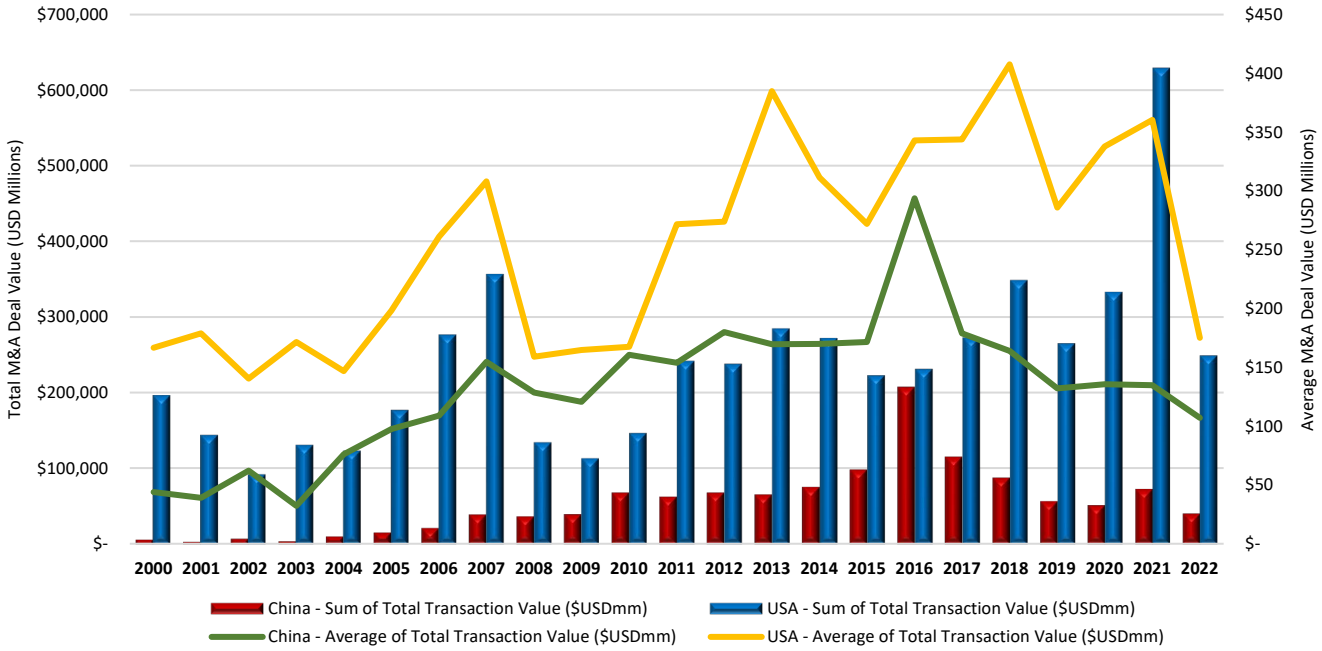
2.4. U.S. Companies lead the way in International Cross-Border Mergers and Acquisitions (M&A) [6]

The U.S. leads the way in M&A activity both domestically and overseas. The total value of outbound M&A deals for U.S. companies more than quadrupled from USD 150 billion in 2020 to 2021 when it hit a record high of USD 766 billion, with an average transaction value per deal of USD 410 million (Figure 2.21).

In the last 20 years, the U.S. has maintained a similar share of the total M&A value of about 29% among the top 10 acquirers, whereas Japan, Canada, and the U.K. shrunk by a third, and France and Germany's share increased. The M&A's shares of other countries, such as the Netherlands, fell by half, affected by the rise of China. Singapore and South Korea have maintained relatively the same shares between both decades. It remains to be seen how the international M&A scene will evolve in this new more nationalistic set of policies implemented since 2018.

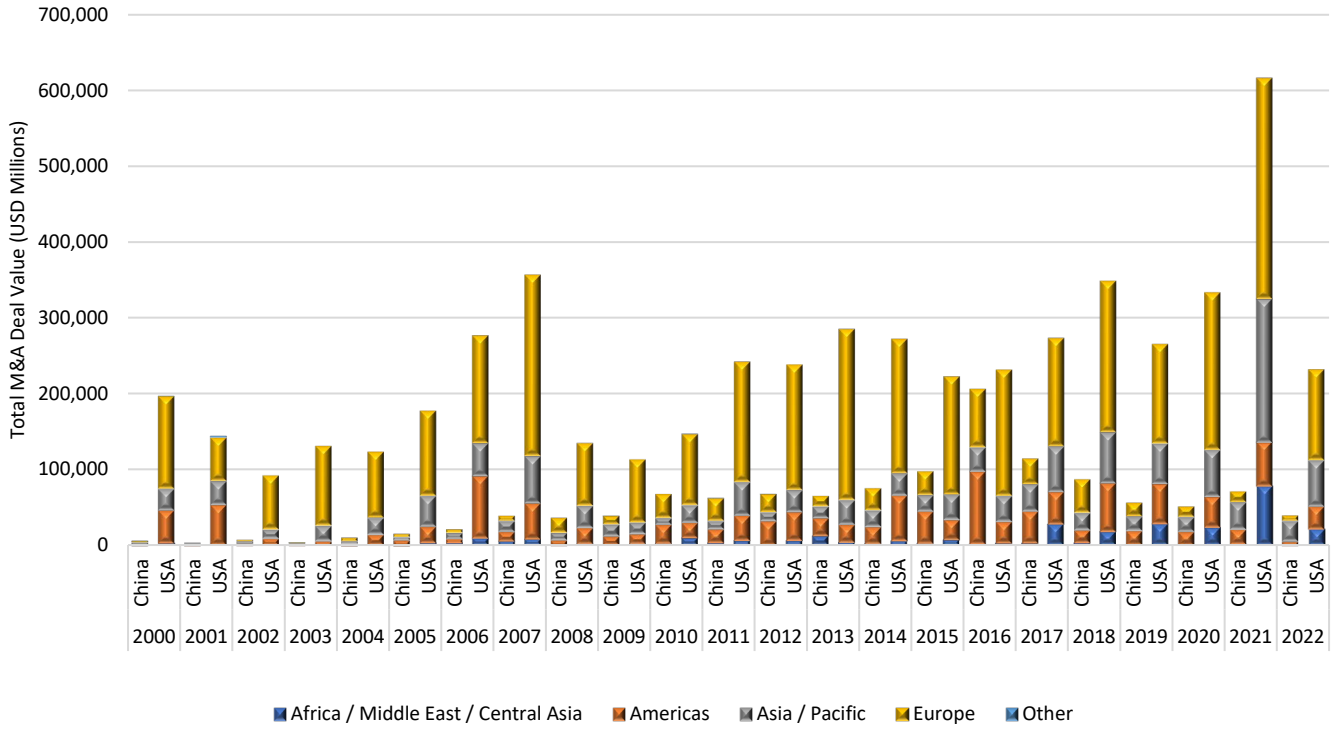
[6] The work of Vineetha Pachava and Xingqi Ye, Researchers at EMI, with the data analytics for the graphs in this M&A section is gratefully acknowledged.

Figure 2.22. Outbound M&A deal value: the U.S. versus China, 2000-2022



Source: EMI research team based on Thomson Reuters – SDC Platinum (https://www.thomsonreuters.com) data accessed in December 2022.

Figure 2.23. Outbound M&A deal value: the U.S. versus China, 2000-2022

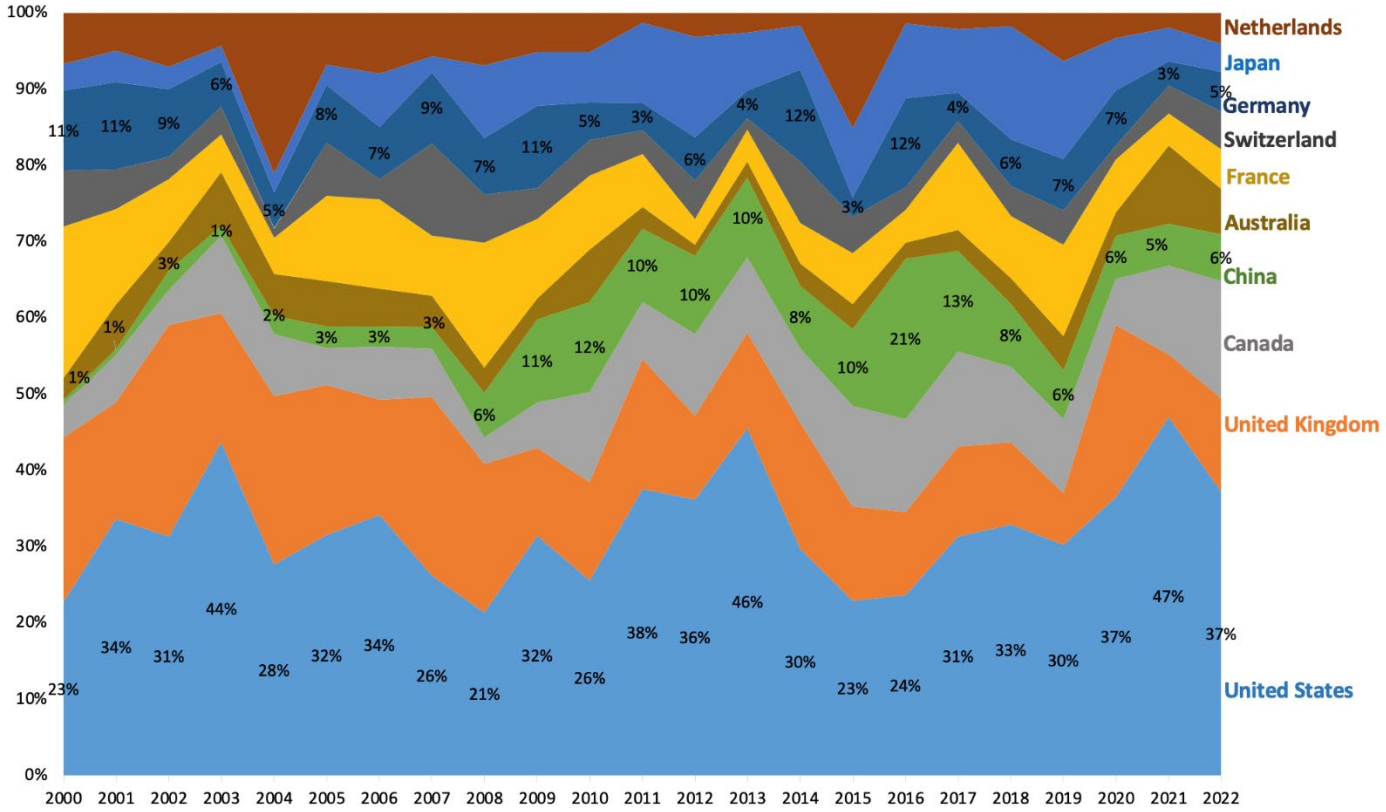


Source: EMI research team based on Thomson Reuters– SDC Platinum (https://www.thomsonreuters.com) data accessed in December 2022.

After the Global Financial crisis, China became one of the ten biggest international M&A acquirers. Their buying represented an average of ten percent of the ten biggest international acquirer nations (Figure 2.23). China's decline in international M&A can be attributed to the pandemic along with the country's unfavorable regulatory environment because in the last five years, the government has limited the number of industries where companies can make international acquisitions to limit "extra-large" and "high-risk" deals (Lo *et al*., 2016). Since 2017, Investments made by Chinese companies in sensitive sectors, namely, high-tech and infrastructure were placed under tighter scrutiny by Western countries (Besse, 2022).

China's international M&A increased slightly in 2021 after declining during 2017-2020. At a total value of USD 41 billion (as of mid-December 2022), China is far from the value of US total outbound M&As, a level that it almost reached in 2016 because of the acquisition of Syngenta in Switzerland.

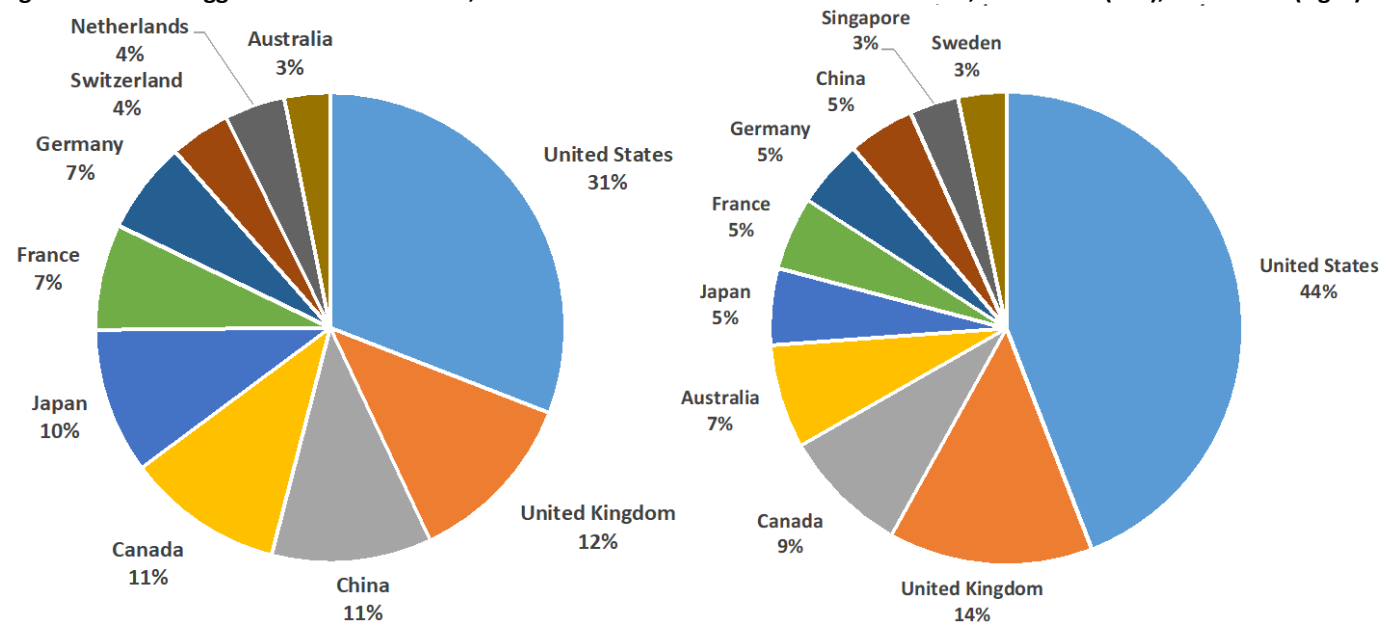
Figure 2.24. Share of total M&A deal value by 10 biggest foreign investor countries, 2000-2022



Source: EMI research team based on Thomson Reuters– SDC Platinum (https://www.thomsonreuters.com) data accessed in December 2022.

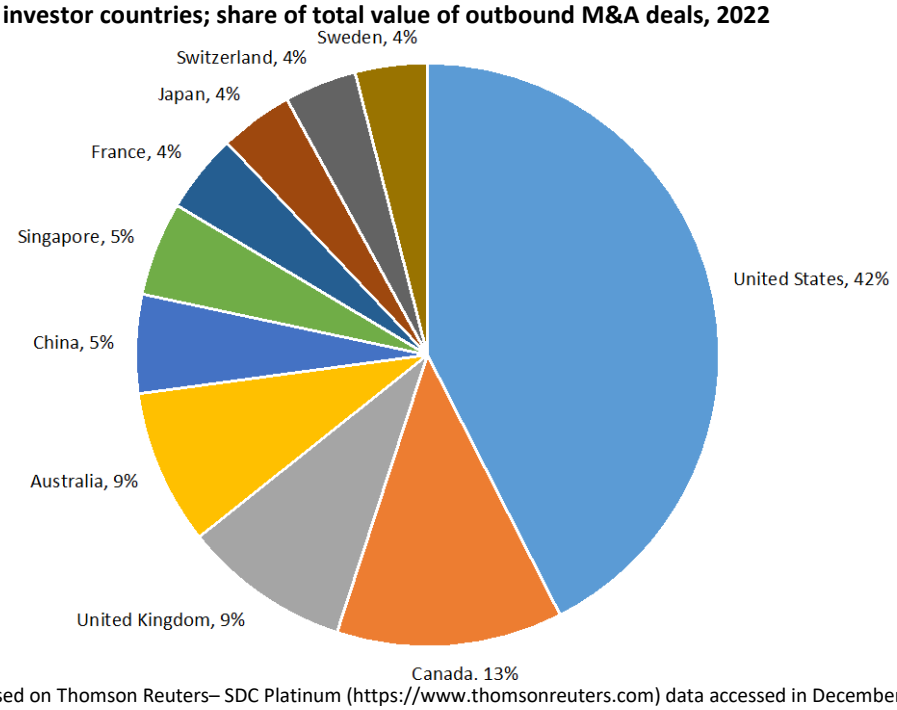
Europe has long been the region most targeted by U.S. and Chinese acquirers, but a growing interest in Asian-Pacific targets was also observed. From 2020 to 2022, Asia accounted for an increasing share of the total value of outbound M&As by US firms from 18% to 26%. Besides its long-term focus on Indian firms, the U.S. also showed more interest in South Asia. The U.S accounted for over 42% of the world's international M&A investment in 2022 (Figure 2.25). Australia also increased its presence from 3% during the period 2011-2020 to 9% in 2021.

Figure 2.25. Ten biggest investor countries; share of total value of outbound M&A deals, 2010-2019 (left), 2020-2021 (right)



Source: EMI research team based on Thomson Reuters– SDC Platinum (https://www.thomsonreuters.com) data accessed in August 2022.

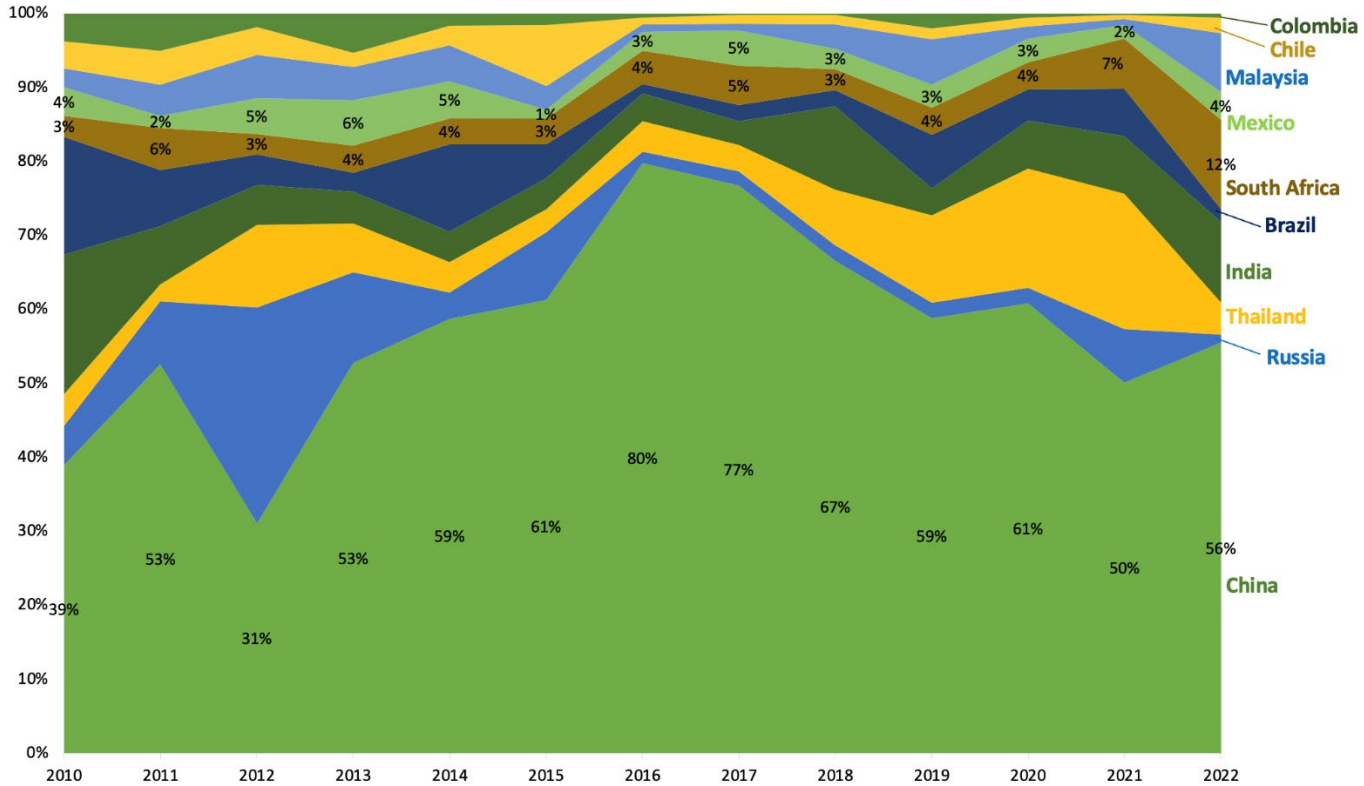
Figure 2.26. Ten biggest investor countries; share of total value of outbound M&A deals, 2022



Source: EMI research team based on Thomson Reuters– SDC Platinum (https://www.thomsonreuters.com) data accessed in December 2022.

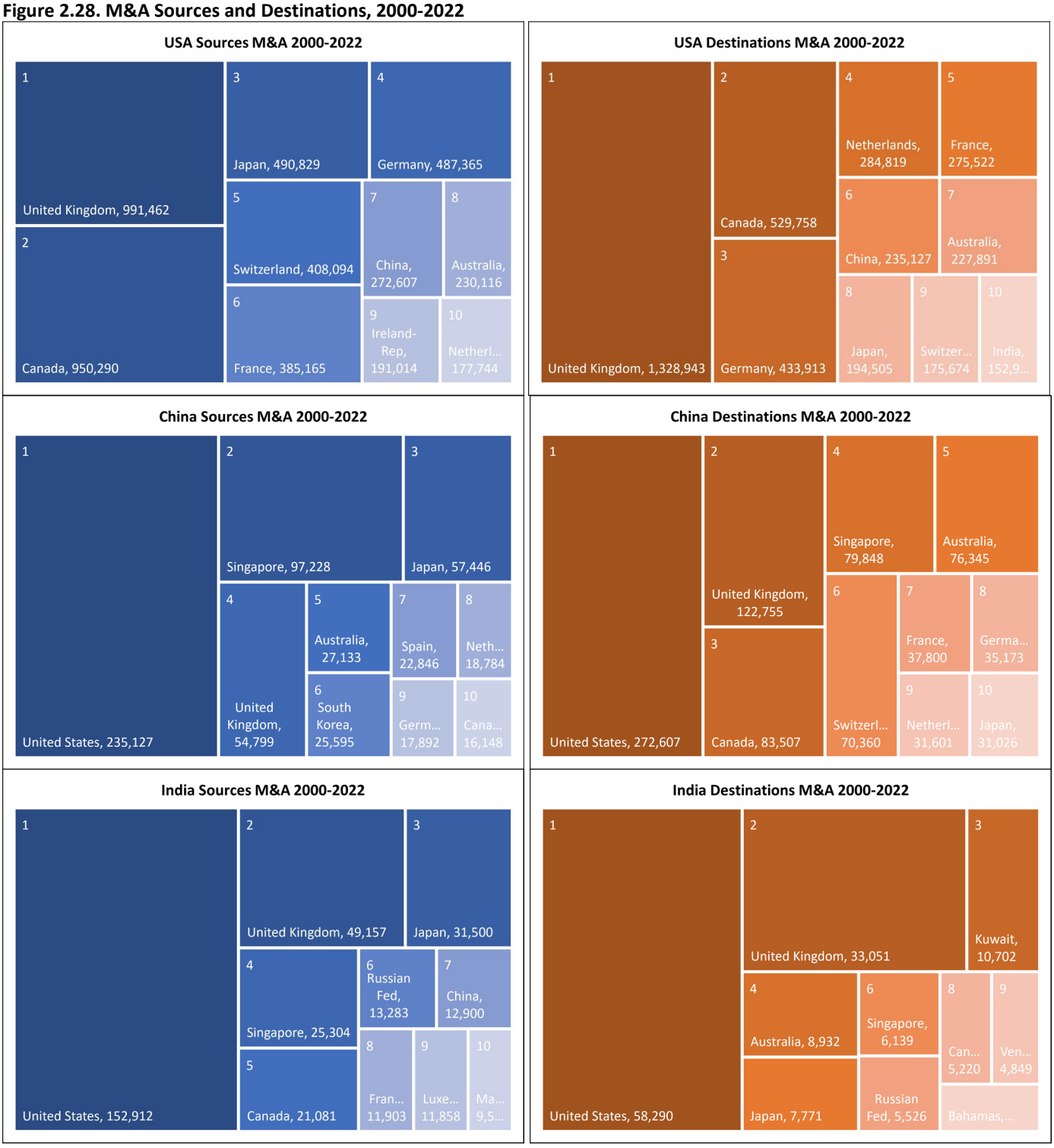
As shown in Figure 2.24 and Figure 2.25, the share of developed markets in terms of outbound cross-border M&A deals has been relatively stable in the past 10 years. During this period, Australia rose number 10th to number 4th. Singapore had a nascent presence in 2021—becoming the third Asian player on the top 10 list—and has further risen in ranking in 2022. As the third largest contributor to the world's cross-border M&A deals during the 2010s, China fell to near the bottom of the top 10 list in 2021 but moved up to the top five again in 2022.

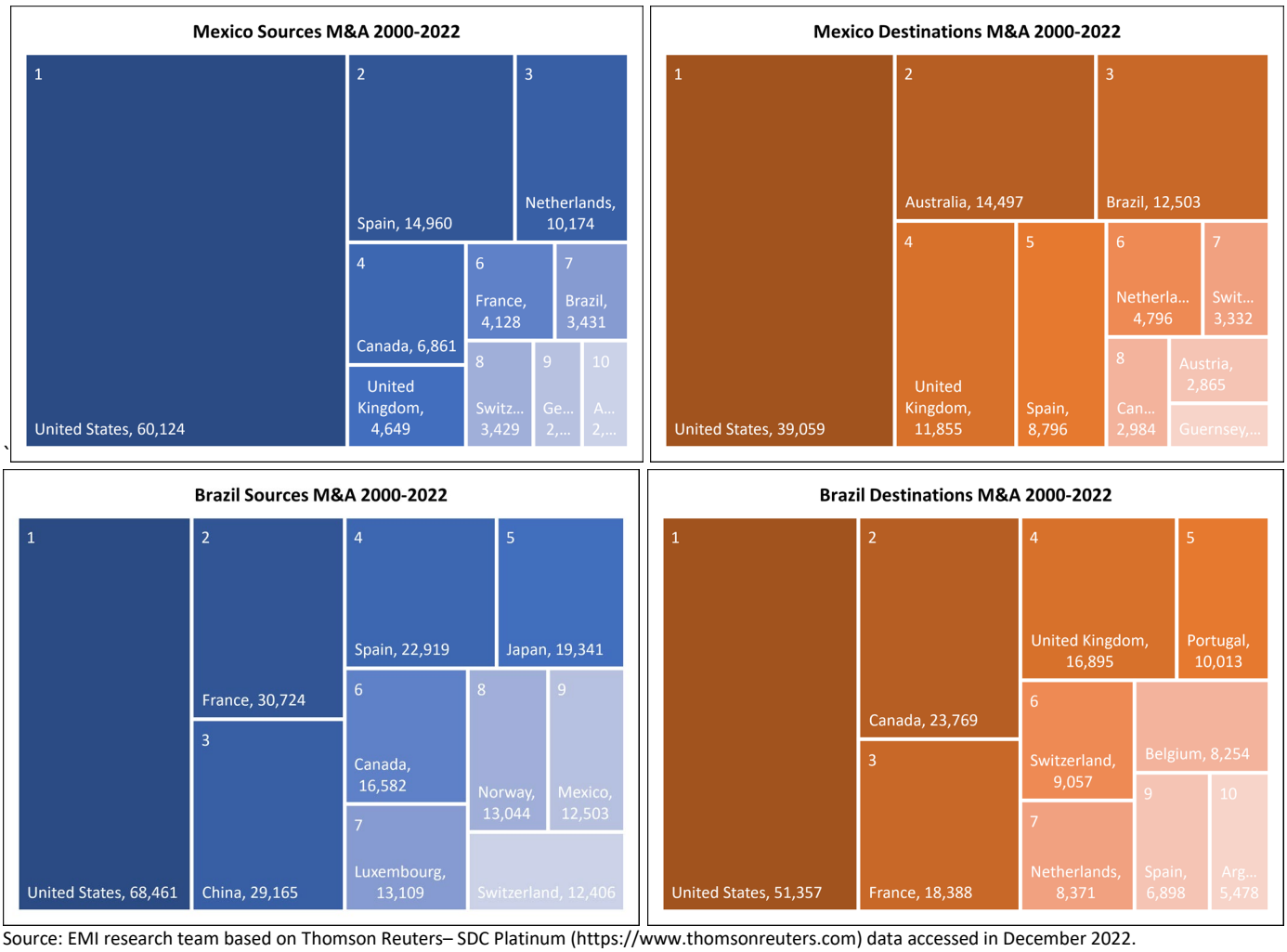
Figure 2.27. Share of total value of international M&A by the ten biggest acquirer countries in the E20 +1 group, 2010-2022



Source: EMI research team based on Thomson Reuters– SDC Platinum (https://www.thomsonreuters.com) data accessed in December 2022.

Figure 2.28. M&A Sources and Destinations, 2000-2022





Source: EMI research team based on Thomson Reuters– SDC Platinum (https://www.thomsonreuters.com) data accessed in December 2022.

The United States was both the largest M&A investor and the most attractive market for M&A investment for all emerging economies analyzed in Figure 2.27: Brazil, India, Mexico, and China. Five E20+1 countries—China, Mexico, Chile, Russia, and Brazil—appear at least once on the M&A chart of the countries examined in Figure 2.26. Geographical proximity and natural markets (Figure 2.27) seem to have played a role in E20+1's M&A target selection, where culturally close emerging markets, such as Mexico and Brazil (sharing cultural ties), heavily invest in each other. Most M&A sources and targets for Chinese firms are in developed economies. Although Europe as a region and the U.S. as an individual country are the main targets of international Chinese M&As, the potential effect of spatial proximity also manifests in China's significant interactions with Singapore and Japan. China was the only emerging market among U.S.'s major M&A sources and targets. Surprisingly, India did not appear on other countries' M&A charts as top 10 sources and destinations. For American companies, the U.K., and Canada are the main targets. These are countries with either geographical proximity (Canada) or very close historical and cultural ties (U.K.).

Table 2.19. Twenty Largest International M&A, 2022 (A). Twenty Largest International M&A with Acquiror from United States, 2022 (B). Twenty Largest International M&A with Acquiror from China, 2022 (C). Twenty Largest International M&A with Acquiror from India, 2022 (D).

(A)

Acquiror Name	Acquiror Nation	Target Name	Target Nation	Target Industry Sector	Value of transaction ($mil)
Koninklijke DSM NV	Netherlands	Firmenich International SA	Switzerland	Soaps, Cosmetics, and Personal-Care Products	20,719.81
Philip Morris Investments BV	Netherlands	Swedish Match AB	Sweden	Tobacco Products	13,837.32
Toronto-Dominion Bank	Canada	First Horizon Corp	United States	Commercial Banks, Bank Holding Companies	13,539.79
Investor Group	Australia	Natl Grid Plc-Gas Transm & Met	United Kingdom	Electric, Gas, and Water Distribution	12,660.48
Investor Group	Australia	Switch Inc	United States	Business Services	11,000.00
Investor Group	United States	Deutsche Telekom AG-Tower Bus	Germany	Telecommunications	10,764.20
Investor Group	Canada	Origin Energy Ltd	Australia	Electric, Gas, and Water Distribution	10,011.26
Investor Group	Singapore	Store Capital Corp	United States	Investment & Commodity Firms,Dealers,Exchanges	9,169.38
Investor Group	Bermuda	Westinghouse Electric Co LLC	United States	Machinery	7,900.00
EQT AB	Sweden	Baring Private Equity Asia Ltd	China	Investment & Commodity Firms,Dealers,Exchanges	7,587.13
Ritchie Bros Auctioneers Inc	Canada	IAA Inc	United States	Wholesale Trade-Durable Goods	7,278.98
Capricorn Energy PLC	United Kingdom	NewMed Energy LP	Israel	Oil and Gas; Petroleum Refining	7,157.54
Gold Fields Ltd	South Africa	Yamana Gold Inc	Canada	Mining	7,105.39
RWE Renewables Americas LLC	United States	Con Edison Clean Energy	United States	Electric, Gas, and Water Distribution	6,800.00
Intel Corp	United States	Tower Semiconductor Ltd	Israel	Electronic and Electrical Equipment	5,721.84
ALD SA	France	LeasePlan Corp NV	Netherlands	Repair Services	5,543.37
Investor Group	United States	Chelsea Football Club Ltd	United Kingdom	Amusement and Recreation Services	5,243.23
CDPQ	Canada	DP World PLC-UAE Assets	Utd Arab Em	Transportation and Shipping (except air)	5,000.00
Breakwater Energy Hldg Sarl	United States	Repsol SA-Global Upstream Bus	Spain	Oil and Gas; Petroleum Refining	4,800.00
Ursa Aroma Merger Subv Ltd	United States	Ironsource Ltd	Israel	Prepackaged Software	4,422.11

(B)

Acquiror Name	Target Name	Target Industry Sector	Target Nation	Value of Transaction ($mil)
Investor Group	Deutsche Telekom AG-Tower Bus	Telecommunications	Germany	10,764.20
Intel Corp	Tower Semiconductor Ltd	Electronic and Electrical Equipment	Israel	5,721.836
Investor Group	Chelsea Football Club Ltd	Amusement and Recreation Services	United Kingdom	5,243.225
EIG Global Energy Partners LLC	Repsol SA-Global Upstream Bus	Oil and Gas; Petroleum Refining	Spain	4,800.00
Unity Software Inc	Ironsource Ltd	Prepackaged Software	Israel	4,422.114
Investor Group	Oak Holdings 2 GmbH	Telecommunications	Germany	4,016.854
MaxLinear Inc	Silicon Motion Technology Corp	Electronic and Electrical Equipment	Taiwan	3,970.341
KKR & Co Inc	Hitachi Transport System Ltd	Transportation and Shipping (except air)	Japan	3,498.103
Crescent Cove Acq Sponsor Llc	ECARX Holdings Inc	Electronic and Electrical Equipment	China	3,400.00
Bain Capital LP	Evident Corp	Measuring, Medical, Photo Equipment; Clocks	Japan	3,109.904
Advent International Corp	Lanxess AG-HPM Business	Chemicals and Allied Products	Germany	2,694.25
Thermo Fisher Scientific Inc	The Binding Site Group Ltd	Drugs	United Kingdom	2,612.25
Apollo Global Management Inc	Worldline SA-TSS Business	Other Financial	France	2,603.83
Deep Medicine Acquisition Corp	Chijet Motor Co Inc	Transportation Equipment	China	2,550.00
Mountain Crest Acq Corp III	ETAO International Group Inc	Health Services	China	2,467.514
Joffre Capital Ltd	Playtika Holding Corp	Prepackaged Software	Israel	2,228.155
EIG Global Energy Partners LLC	Tokyo Gas Australia 1 Pty Ltd	Oil and Gas; Petroleum Refining	Australia	2,150.00
Investor Group	Athora Holding Ltd	Insurance	Bermuda	1,975.00
KKR & Co Inc	Mitsubishi Corp-UBS Realty Inc	Investment & Commodity Firms,Dealers,Exchanges	Japan	1,937.332
Clearlake Capital Group LP	Intertape Polymer Group Inc	Paper and Allied Products	Canada	1,873.178

(C)

Acquiror Name	Target Name	Target Nation	Target Industry Sector	Value of Transaction
Wuxi Xichan Microchip	Ampleon Netherlands BV	Netherlands	Electronic and Electrical Equipment	1,944.544
Nanjing Ying Peng Hui Kang	Cellenkos Inc	United States	Drugs	1,091.563
Provident Acquisition Corp	Perfect Corp	Taiwan	Prepackaged Software	1,010.00
Ganfeng Lithium Co Ltd	Lithea Inc	Argentina	Mining	962.00
Baring Private Equity Asia Ltd	IGT Solutions Pvt Ltd	India	Business Services	800.00
ESR Cayman Ltd	DLJ-China Logistics Assets(11)	China	Transportation and Shipping (except air)	717.00
China Uwin Tech Co Ltd	Global Dining Holdings Ltd	Singapore	Retail Trade-Food Stores	609.051
PAG	Shinhan Invest Corp-Office Bld	South Korea	Investment & Commodity Firms,Dealers,Exchanges	485.301
PAG	Huis Ten Bosch Co Ltd	Japan	Amusement and Recreation Services	480.64
HH&L Acquisition Co	DiaCarta Inc	United States	Business Services	460.00
Dongguan Feite Semiconductor	Future Tech Devices Intl Ltd	Singapore	Electronic and Electrical Equipment	414.14
Zhejiang Huayou Cobalt Co Ltd	Prospect Resources-Arcadia Pro	Zimbabwe	Mining	378.00
Baring Private Equity Asia Ltd	Hilton Hotel	Australia	Hotels and Casinos	367.555
Kingboard Holdings Ltd	Two London Wall Place Ltd	Jersey	Real Estate; Mortgage Bankers and Brokers	360.306
Zijin Mining Group Co Ltd	Rosebel Gold Mines NV	Surinam	Mining	360.00
China Uwin Tech Co Ltd	Global Dining Holdings Ltd	Singapore	Retail Trade-Food Stores	346.323
New World Development Co Ltd	Goodman China-Properties	China	Business Services	337.36
Tencent Holdings Ltd	Guillemot Brothers Ltd	United Kingdom	Investment & Commodity Firms,Dealers,Exchanges	297.78
Jardine Matheson Holdings Ltd	BJJ	Indonesia	Commercial Banks, Bank Holding Companies	259.272
Road King Infrastructure Ltd	PT Jasamarga Semarang Batang	Indonesia	Construction Firms	252.366

(D)

Acquiror Name	Target Name	Target Nation	Target Industry Sector	Value of Transaction ($mil)
Biocon Ltd	Viatris Inc-Biosimilars Bus	United States	Drugs	3,335.00
JSW Steel Ltd	Diego Calvo SpA	Chile	Construction Firms	700.00
Tech Mahindra Ltd	Com Tec Co It Ltd	Cyprus	Business Services	353.834
Reliance Industries Ltd	Glance InMobi Pte Ltd	Singapore	Business Services	200.00
Investor Group	TripActions Inc	United States	Transportation and Shipping (except air)	154.00
Sundaram Clayton Ltd	Norton Motorcycles (UK) Ltd	United Kingdom	Transportation Equipment	130.66
Investor Group	Digital Collectibles Pte Ltd	Singapore	Prepackaged Software	120.00
ITC Ltd	PTC Inc-PLM Business	United States	Prepackaged Software	115.00
Infosys Ltd	Base Life Science As	Denmark	Business Services	110.396
KPIT Technologies Ltd	Technica Engineering GmbH	Germany	Electronic and Electrical Equipment	109.67
Cyient Ltd	Citec Group Oy AB	Finland	Business Services	101.464
Grasim Industries Ltd	Ras Al Khaimah Co for White Ce	Utd Arab Em	Wholesale Trade-Durable Goods	101.10
Sundaram Clayton Ltd	Swiss Emobility Grp Schweiz AG	Switzerland	Miscellaneous Retail Trade	100.00
Netcore Cloud Pvt Ltd	Unbxd Inc	United States	Business Services	100.00
Reliance Industries Ltd	Columbus Centre Corp(Cayman)	Cayman Islands	Investment & Commodity Firms,Dealers,Exchanges	98.15
Reliance Industries Ltd	Mandarin Oriental New York Inc	United States	Hotels and Casinos	98.15
Investor Group	Amagi Corp	United States	Communications Equipment	95.00
True North Managers LLP	Accion Labs Inc	United States	Prepackaged Software	93.00
Safex Chemicals India Ltd	Briar Chemicals Ltd	United Kingdom	Wholesale Trade-Nondurable Goods	80.702
Mastek Ltd	Metasoftech Solutions Llc	United States	Prepackaged Software	76.60
Lupin Ltd	Sunovion Pharm Inc-Respiratory	United States	Drugs	75.00
Persistent Systems Ltd	MediaAgility Inc	United States	Prepackaged Software	71.00
Murugappa Group	RHODIUS Schleif GmbH & Co KG	Germany	Stone, Clay, Glass, and Concrete Products	62.167
Reliance Industries Ltd	Lithium Werks BV-Assets	Netherlands	Electronic and Electrical Equipment	61.00
Hero MotoCorp Ltd	Zero Motorcycles Inc	United States	Transportation Equipment	60.00
Hinduja Global Solutions Ltd	TekLink International Inc	United States	Business Services	58.80
Investor Group	InterviewBit Technologies Pvt	Singapore	Agriculture, Forestry, and Fishing	55.106
Investor Group	InterviewBit Technologies Pvt	Singapore	Agriculture, Forestry, and Fishing	55.00
Investor Group	Forsight Robotics Ltd	Israel	Health Services	55.00
HCL Technologies Ltd	Confinale AG	Switzerland	Prepackaged Software	53.818
Dr Reddy's Laboratories Ltd	Eton Pharmaceuticals Inc-injec	United States	Drugs	50.00
Investor Group	LambdaTest Inc	United States	Prepackaged Software	45.00
Cyient Ltd	Celfinet Consultoria De	Portugal	Telecommunications	43.944

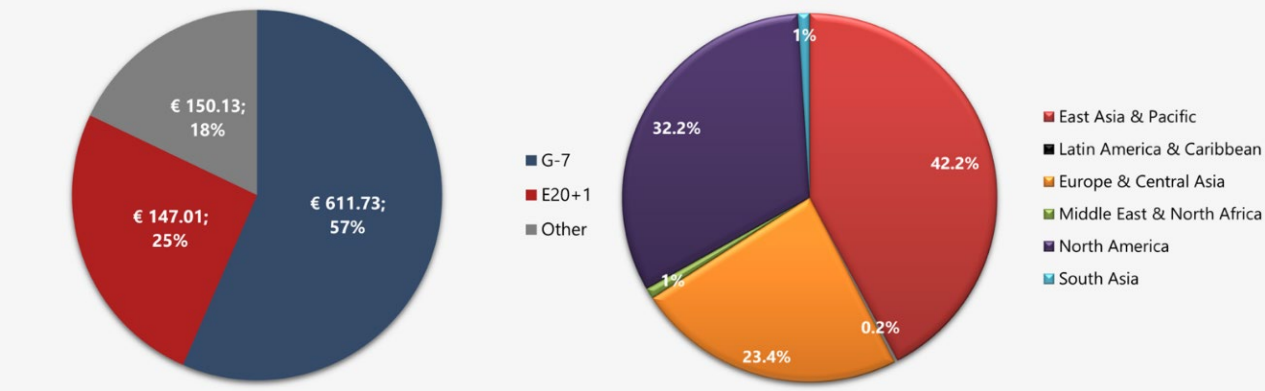
Source: EMI research team based on Thomson Reuters– SDC Platinum (https://www.thomsonreuters.com) data accessed in December 2022.

Five out of the twenty largest international M&A deals in 2022 (Table 2.19) involved emerging markets, four of which were acquisitions of emerging-market targets by developed-market firms. The three Saudi Arabian targets were oil companies. China, Israel, and South Africa were the only emerging countries on the list.

2.5. Research and development (R&D) investments as a source of growth and innovation[7]

In this section, we explore Research and Development (R&D) investments which play a crucial role in economic growth. Numerous studies have suggested that R&D spending drives growth through its positive impact on productivity and innovation (e.g., Romer, 1990). Private R&D not only increases efficiency, reduces costs, and facilitates the generation of new ideas and products, but it also causes knowledge spillovers across firm/industrial/national boundaries to benefit long-term growth across nations (Aghion & Howitt, 1992). Here, we analyze the Eurostat database of 2,500 companies with the highest R&D expenditure in the world.

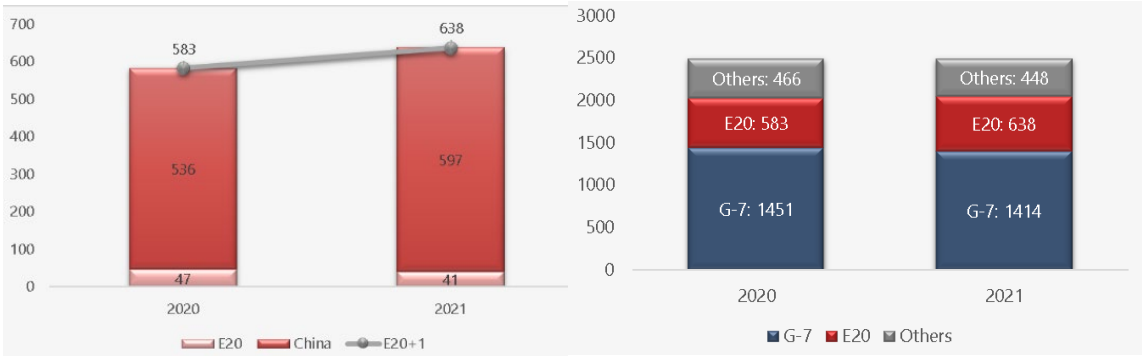
Figure 2.29. 2,500 largest corporate spenders in R&D by country group and region (2021)



Source: European Commission, Joint Research Centre, Grassano, N., Hernandez Guevara, H., Tübke, A. (2022). The 2021 EU industrial R&D investment scoreboard, Publications Office of the European Union. https://data.europa.eu/doi/10.2760/559391, accessed by July 2022

As they have a higher GDP per capita and more available capital, G7 countries spend significantly more on R&D than E20 countries (Figure 2.28 and Figure 2.29). These seven advanced economies contributed more than half of the world's R&D spending (57%) in 2021, while the R&D investment in E20 countries combined accounted for one-quarter (Figure 2.28). The gap between G7 and E20 slightly declined in the past year, from 35 to 33 percentage-point differences. East Asia and Pacific continued to be the largest R&D spender by region, as four of the top 10 countries (China, Japan, Taiwan, and Korea Rep.) investing in R&D are in this region, and its prominence grew from 41.9% to 42.2% over the last year (Figure 2.28). The Middle East and Latin America had a nearly invisible presence, and no significant growth was seen in 2021. In a World Bank report "Latin American Entrepreneurs: Little Innovation" (Lederman *et al.,* 2014) published in 2014, the authors highlighted that while the number of multinationals with a Latin American origin had increased, Latin American multinationals significantly fell behind their counterparts from other regions, including developing regions, in terms of R&D investment. One factor identified to cause the stagnant R&D spending was the relatively small size of Latin American MNCs and their focus on regional markets, which limited technological gains from participating in global value chains facilitating knowledge and technology transfers from advanced economies.

Figure 2.30. Number of EMNCs in the top 2,500 global R&D spenders, 2020 versus 2021

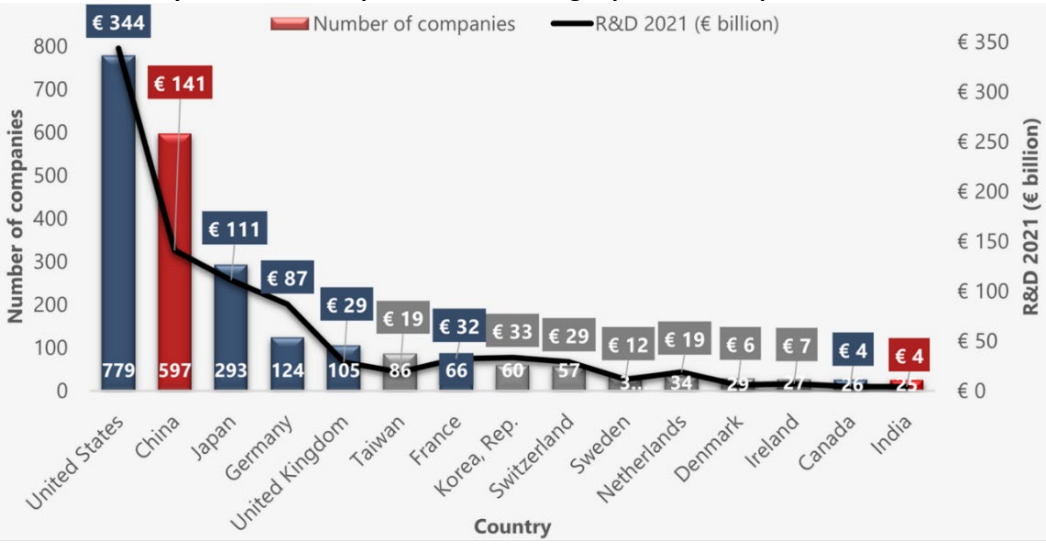


Source: European Commission, Joint Research Centre, Grassano, N., Hernandez Guevara, H., Tübke, A. (2022). The 2021 EU industrial R&D investment scoreboard, Publications Office of the European Union. https://data.europa.eu/doi/10.2760/559391, accessed by July 2022

[7] The help of Yuliana Olatora and María Paula Romero, Interns at EMI in the summer of 2022, is gratefully acknowledged.

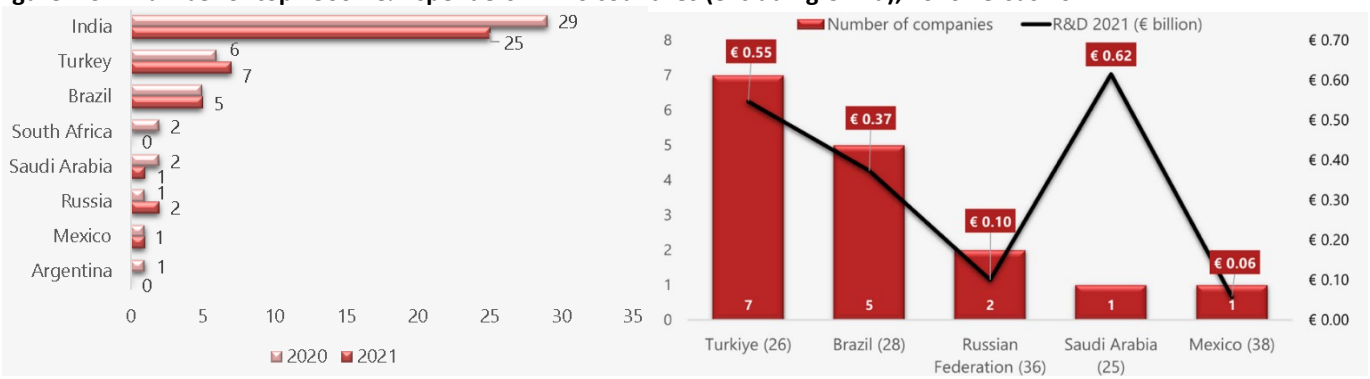
Looking at country-level data (Figure 2.30 and Figure 2.31), we confirmed that the top R&D spenders were clustered in developed economies except for China. During the year 2021, 61 more Chinese companies entered the top R&D spender list (Figure 2.30), narrowing the gap between China and US by 57. Consistently raising R&D spending "at a rate higher than GDP growth" (Normile, 2020), China has invested a proportion of its GDP in R&D comparable to that of OECD countries as a group (2.23% vs. 2.83%). India ranked 14th in terms of the number of top R&D spenders, on par with Canada Figure 2.30.

Figure 2.31. Top 15 countries by number of companies listed among top 2500 R&D spenders, 2021



Source: European Commission, Joint Research Centre, Grassano, N., Hernandez Guevara, H., Tübke, A. (2022). The 2021 EU industrial R&D investment scoreboard, Publications Office of the European Union. https://data.europa.eu/doi/10.2760/559391, accessed by July 2022

Figure 2.32. Number of top 2500 R&D spenders in E20 countries (excluding China), 2020 versus 2021



Source: European Commission, Joint Research Centre, Grassano, N., Hernandez Guevara, H., Tübke, A. (2022). The 2021 EU industrial R&D investment scoreboard, Publications Office of the European Union. https://data.europa.eu/doi/10.2760/559391, accessed by July 2022

Within the E20 +1 world excluding China, India has the largest number of companies in the top R&D spender list (Figure 2.31), followed by Turkey and Brazil. However, it is also important to note here that India has one of the world's lowest R&D expenditures as a percentage of GDP, falling behind Brazil, Russia, and Malaysia (Fortune India, 2022). Saudi Arabia, while home to only one top R&D-spender company, has the second highest total R&D expenditure among E20 countries, all contributed by the Saudi Arabian Oil Company.

Table 2.20. Twenty biggest R&D spenders in the world

#	Company	Country	Industry	R&D 2020 (€ billion)
1	ALPHABET	US	Software & Computer Services	22.47
2	HUAWEI INVESTMENT & HOLDING	China	Technology Hardware & Equipment	17.46
3	MICROSOFT	US	Software & Computer Services	16.88
4	SAMSUNG ELECTRONICS	South Korea	Electronic & Electrical Equipment	15.89
5	APPLE	US	Technology Hardware & Equipment	15.28
6	FACEBOOK	US	Software & Computer Services	15.03
7	VOLKSWAGEN	Germany	Automobiles & Parts	13.89
8	ROCHE	Switzerland	Pharmaceuticals & Biotechnology	11.25
9	INTEL	US	Technology Hardware & Equipment	11.05
10	JOHNSON & JOHNSON	US	Pharmaceuticals & Biotechnology	9.91
11	TOYOTA MOTOR	Japan	Automobiles & Parts	8.62
12	DAIMLER	Germany	Automobiles & Parts	8.44
13	BRISTOL-MYERS SQUIBB	US	Pharmaceuticals & Biotechnology	8.41
14	MERCK US	US	Pharmaceuticals & Biotechnology	8.33
15	PFIZER	US	Pharmaceuticals & Biotechnology	7.84
16	BAYER	Germany	Pharmaceuticals & Biotechnology	7.70
17	ALIBABA GROUP HOLDING	China	Software & Computer Services	7.14
18	NOVARTIS	Switzerland	Pharmaceuticals & Biotechnology	7.11
19	BMW	Germany	Automobiles & Parts	6.28
20	HONDA MOTOR	Japan	Automobiles & Parts	6.23

Source: European Commission, Joint Research Centre, Grassano, N., Hernandez Guevara, H., Tübke, A. (2022). The 2021 EU industrial R&D investment scoreboard, Publications Office of the European Union. https://data.europa.eu/doi/10.2760/559391, accessed by July 2022

Table 2.21. Ten biggest R&D spenders in E20+1 countries

#	Company	Country	Industry	R&D 2020 (€ billion)
1	HUAWEI INVESTMENT & HOLDING	China	Technology Hardware & Equipment	17.46
2	ALIBABA GROUP HOLDING	China	Software & Computer Services	7.14
3	TENCENT	China	Software & Computer Services	4.86
4	CHINA STATE CONSTRUCTION ENGINEERING	China	Construction & Materials	3.67
5	CHINA RAILWAY	China	Construction & Materials	2.72
6	CHINA COMMUNICATIONS CONSTRUCTION	China	Construction & Materials	2.46
7	BAIDU	China	Software & Computer Services	2.43
8	CHINA RAILWAY CONSTRUCTION	China	Construction & Materials	2.32
9	TATA MOTORS	India	Automobiles & Parts	1.97
10	PETROCHINA	China	Oil & Gas Producers	1.96

Source: European Commission, Joint Research Centre, Grassano, N., Hernandez Guevara, H., Tübke, A. (2022). The 2021 EU industrial R&D investment scoreboard, Publications Office of the European Union. https://data.europa.eu/doi/10.2760/559391, accessed by July 2022

Table 2.22. Ten biggest R&D spenders in E20 countries (excluding China)

#	Company	Country	Industry	R&D 2020 (€ billion)
1	TATA MOTORS	India	Automobiles & Parts	1.97
2	SAUDI ARABIAN OIL	Saudi Arabia	Oil & Gas Producers	0.62
3	SUN PHARMACEUTICAL INDUSTRIES	India	Pharmaceuticals & Biotechnology	0.23
4	AUROBINDO PHARMA	India	Pharmaceuticals & Biotechnology	0.18
5	DR REDDY'S LABORATORIES	India	Pharmaceuticals & Biotechnology	0.17
6	LUPIN	India	Pharmaceuticals & Biotechnology	0.16
7	HCL TECHNOLOGIES	India	Software & Computer Services	0.16
8	ASELSAN ELEKTRONIK SANAYI VE TICARET	Turkey	Electronic & Electrical Equipment	0.15
9	GLENMARK PHARMACEUTICALS	India	Pharmaceuticals & Biotechnology	0.15
10	RELIANCE INDUSTRIES	India	Chemicals	0.13

Source: European Commission, Joint Research Centre, Grassano, N., Hernandez Guevara, H., Tübke, A. (2022). The 2021 EU industrial R&D investment scoreboard, Publications Office of the European Union. https://data.europa.eu/doi/10.2760/559391, accessed by July 2022

Huawei stood out as the largest R&D spender from an emerging market and the second-largest R&D spender in the world in 2021 (Table 2.20, Table 2.21, and Table 2.22). In response to the tightening restrictions that the U.S. government has placed on its access to technology, Huawei accelerated its in-house technology development, nearly doubling its R&D budget over the past five years, pumping USD 22 billion into research in 2021 (Bloomberg News, 2022). This figure is especially impressive considering Huawei's declining revenue: Huawei's R&D expenditure as a percentage of revenue (22.4%) was higher than that of Meta, Amazon, Alphabet, as well as Apple.

Among the top 10 largest R&D spenders in E20+1 countries, India's Tata Motors was both the only non-Chinese player and the only automotive manufacturer. The list without Chinese companies was, on the other hand, dominated by Indian MNCs. Another noteworthy distinction between the China-included and China-excluded lists is the presence of pharmaceutical and

biotechnology companies. Pharma & biotech has always been a technology-intensive sector characterized by high R&D investment: nearly half of the top 20 R&D spenders in the world and exactly half of the top 10 R&D spenders in E20 countries were in this sector. However, pharma and biotech were not listed among the 10 largest R&D spenders in China. Future analyses may pay attention to the effect of the "Made in China 2025" Initiative which aims to advance innovative medicines by heavily investing in life science infrastructure. India, on the other hand, has the world's third-largest pharma industry in terms of volume (Department of Pharmaceuticals, 2021). However, its pharma industry has been dependent on China, which supplies about 70% of its active pharmaceutical ingredients (API) (Kay & Makol, 2022). This has further driven up the R&D expenditure of Indian pharma and biotech that are eager to reduce the dependency.

2.6. American companies dominate the global business landscape and the innovation

As we have seen in this chapter American companies continue to dominate the global business landscape by being present in many countries around the world. We expect their global dominance to continue as they excel in international mergers and acquisitions. American companies also continue to invest in Research and Development, and this will enable them to continue to be at the technological frontiers.

However, the global presence of Chinese companies should not be underestimated. It has increased by 50% since our first analysis in 2016. The Middle Kingdom companies' footprint is present on all continents. While the 300 biggest American companies are in 88.5% of all countries of the world, the equivalent set of Chinese companies are present in 80% of all countries. Chinese companies (and those from India) are also continuing to increase their investments in Research and Development and decreasing the gap with their American counterparts.

References

Aghion, P. & Howitt, P. (1992). A Model of Growth through Creative Destruction. *Econometrica 60* (2): 323-351.

Besse, D. (2022). Challenges and Opportunities in China's Outbound M&A Market. *MOFO*. Available from https://www.mofo.com/resources/news/220513-chinas-outbound-ma-market (accessed in December 2022)

Bloomberg News. (2022) Huawei Pumps $22 Billion Into R&D to Beat U.S. Sanctions. *Bloomberg News*. Available from https://www.bloomberg.com/news/articles/2022-04-25/huawei-rivals-apple-meta-with-r-d-spending-to-beat-sanctions?leadSource=uverify%20wall (accessed in December 2022)

Casanova, L.; Miroux, A. 2017. *Emerging Market Multinationals Report: Emerging Multinationals in a Changing World*. Emerging Markets Institute in collaboration with the OECD development Center. S.C. Johnson School of Management. Cornell University. ISBN: 978-1-7328042-1-0 . ISSN 2689-0127. https://ecommons.cornell.edu/handle/1813/66953 DOI https://doi.org/10.7298/3dnm-0a74

Casanova, L.; Miroux, A. 2016. *Emerging Market Multinationals Report: The China Surge*. Emerging Markets Institute. eCommons Cornell University. Emerging Markets Institute. Cornell S.C. Johnson College of Business. ISBN-13: 978-1-7328042-0-3. ISSN 2689-0127.

Fortune India. (2022) India's R&D expenditure is one of the lowest in the world: NITI Aayog. *Fortune India.* Available from https://www.fortuneindia.com/enterprise/indias-rd-expenditure-is-one-of-the-lowest-in-the-world-niti-aayog/109030 (accessed in December 2022)

Government of India Department of Pharmaceuticals. (2021). Annual Report 2020-21. Available from https://pharmaceuticals.gov.in/sites/default/files/english%20Annual%20Report%202020-21.pdf (accessed in December 2022)

Kay, C. & Makol, M. K. (2022) India Hopes 'Pharma City' Will Break China's Grip on Industry. *Bloomberg*. Available from: https://www.bloomberg.com/news/features/2022-04-11/india-hopes-pharma-city-will-break-china-s-grip-on-drug-industry?leadSource=uverify%20wall#xj4y7vzkg (accessed in December 2022)

Lebedenko, S. (2022). The Rise of Sino-Russian Biotech Cooperation. *Foreign Policy Research Institute*. Available from https://www.fpri.org/article/2022/05/the-rise-of-sino-russian-biotech-cooperation/ (accessed in December 2022)

Lederman, D., Messina, J., Pienknagura, S., & Rigolini, J. (2014). Latin american entrepreneurs: Many firms but little innovation. The World Bank. Washington DC.

Lo, C., Jiang, J., Li, L., Bisley, M., Ho, V., Lee, W., Ho, Y. (2016). China's new restrictions on outbound investments and remittance. *Allen & Overy*. Available from https://www.allenovery.com/en-gb/global/news-and-insights/publications/chinas-new-restrictions-on-outbound-investments-and-remittance (accessed in December 2022)

Normile, D. (2020) China again boosts R&D spending by more than 10%. *Science Insider*. Available from https://www.science.org/content/article/china-again-boosts-rd-spending-more-10 (accessed in December 2022)

Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy 98*: 71- 102.

Thomas, O. (2012). Huawei, The Chinese Equipment Maker Accused of Spying, Has Long Relied On IBM. Business Insider. Available from https://www.businessinsider.com/ibm-huawei-2012-10 (accessed in December 2022)

Xing, S. & Huo, W. (2014). "How to Break Through the 'Cascade Effect' to Realize the Structure Optimization—Based on the Consideration on Huawei's Binary Interaction Mode of Industry Upgrading," International Conference of Economic Management and Trade Cooperation, Xi'an, china, Guangxi Normal College, April 12-13.

Table 2.23. Ten largest Chinese companies by the value of announced FDI projects in Latin America, 2011-2022, in USD million

	Company	2011-2014	2015-2018	2019-2022	Total
1	Hong Kong Nicaragua Canal Development Investment (HKND Group)	40,000.0	0.0	0.0	**40,000**
2	Huawei Technologies	2,046.1	197.8	6,444.4	**8,688**
3	Hutchison Whampoa	4,208.0	0.0	0.0	**4,208**
4	China Communications Construction Company	1,354.2	468.3	1,821.9	**3,644**
5	China Ocean Shipping Company (COSCO)	0.0	0.0	3,000.0	**3,000**
6	China Minmetals Group	3,000.0	0.0	0	**3,000**
7	Xinjiang TBEA Group	0.0	0.0	2,386.3	**2,386**
8	Tibet Summit Resources (Tibet Summit Industry)	0.0	0.0	2,380.0	**2,380**
9	Yida International Investment Group	2,000.0	0.0	0.0	**2,000**
10	Heilongjiang Beidahuang	1,500.0	0.0	0.0	**1,500**

Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.24. Ten largest U.S. companies by the value of announced FDI projects in Latin America, 2011-2022, in USD million

	Company	2011-2014	2015-2018	2019-2022	Total
1	General Motors (GM)	7,685.7	3,566.3	1,841.8	**13,094**
2	Sempra Energy (Sempra Energy Resources)	557.6	3,218.5	3,056.8	**6,833**
3	Ford Motor Company	2,568.3	1,632.0	1,260.3	**5,461**
4	Constellation Brands	1,650.0	1,860.0	1,663.3	**5,173**
5	AES Corporation (AES)	2,654.1	880.0	1,559.2	**5,093**
6	AT&T	883.2	3,678.1	349.1	**4,910**
7	Amazon.com	226.8	1,085.6	3,060.8	**4,373**
8	Bravo Motor Company (ArqBravo Group)	0.0	0.0	4,360.0	**4,360**
9	Level 3 Communications	3,421.5	485.0	0.0	**3,907**
10	TransGas Development Systems	0.0	3,800.0	0.0	**3,800**

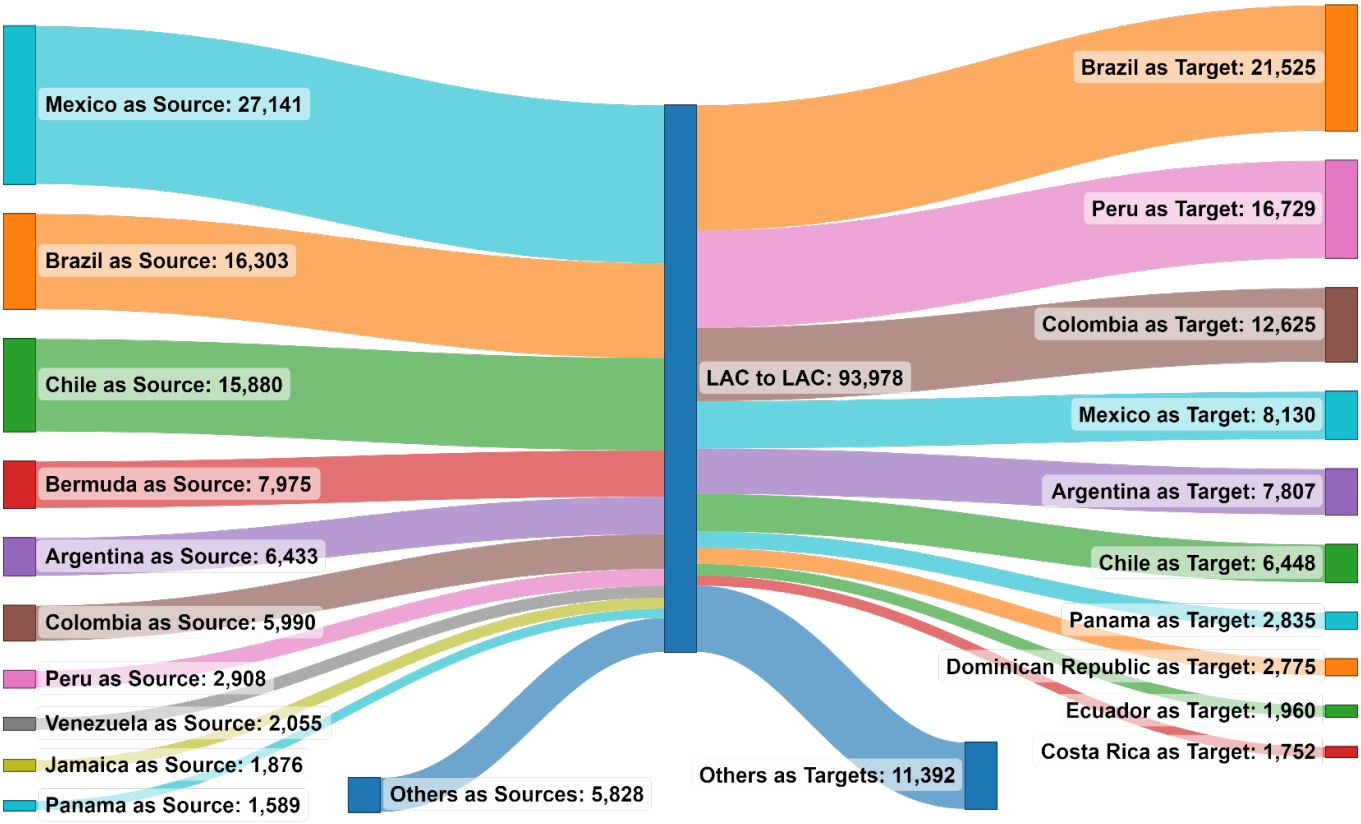
Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

Table 2.25. Ten largest European companies by the value of announced FDI projects in Latin America, 2011-2022, in USD million

	Company	Country	2011-2014	2015-2018	2019-2022	Total
1	Telefonica	Spain	10,812.3	5,532.2	2,639.7	**18,984**
2	Enel	Italy	4,340.8	6,341.0	7,022.6	**17,704**
3	Volkswagen	Germany	2,556.6	2,691.0	2,998.5	**8,246**
4	Iberdrola	Spain	3,025.4	3,297.9	1,797.0	**8,120**
5	Heineken Holding	Netherlands	513.1	1,968.6	4,912.7	**7,394**
6	Fiat Chrysler Automobiles (Fiat)	United Kingdom	4,681.1	693.7	1,999.1	**7,374**
7	UPM-Kymmene	Finland	145.6	4,126.7	3,005.0	**7,277**
8	Abengoa	Spain	2,809.7	4,306.7	77.3	**7,194**
9	Mainstream Renewable Power	Ireland	1,959.6	1,839.8	2,391.4	**6,191**
10	Techint	Italy	2,553.0	2,623.5	1,000.0	**6,177**
11	Engie (GDF SUEZ) (Gaz de France)	France	1,209.6	984.3	3,906.4	**6,100**
12	Deutsche Post	Germany	2,889.6	1,383.2	1,374.5	**5,647**
13	Telecom Italia	Italy	3,467.6	1,025.7	647.2	**5,141**
14	TotalEnergies (Total)	France	229.0	2,492.9	1,809.4	**4,531**
15	Acciona	Spain	1,048.9	2,558.7	513.4	**4,121**
16	Nestle	Switzerland	2,414.3	823.4	880.6	**4,118**
17	Urbas	Spain	0.0	0.0	3,930.0	**3,930**
18	BP (British Petroleum)	United Kingdom	397.3	40.0	3,382.1	**3,819**
19	Mercedes-Benz Group (Daimler)	Germany	2,916.6	432.5	392.2	**3,741**
20	Siemens	Germany	577.9	583.6	2,290.7	**3,452**

Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

Figure 2.33. Total value of announced greenfield projects (USD million) from and to Latin American countries, 2011-2022.



Note: Chart made with SankeyMATIC

Source: EMI research team based on fDi Markets Library by Financial Times (https://www.fdimarkets.com/) accessed in January 2023.

Chapter 3

EMERGING ECONOMIES MOVING INTO A VOLATILE, UNCERTAIN, COMPLEX, AND AMBIGUOUS (VUCA) WORLD

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Anne Miroux, Faculty Fellow
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Executive Summary

This chapter examines the growth of emerging economies in a world struck by another crisis, i.e., the war in Ukraine, and highlights the consequences of the conflict for these economies because of its impact on the energy & commodity prices, interest rates, inflation, and their debt situation. The chapter pays particular attention to the currency volatility faced by many emerging markets caused by the COVID pandemic and the war, and, in that respect, shows the pioneering role of emerging markets in the adoption of digital currencies. The chapter also briefly examines global value chains as they go from one crisis to another.

Keywords: Emerging markets, E20+1, Central Bank Digital Currencies (CBDC), Economic growth

3.1. From pandemics to war, growth on a downward trend

The COVID pandemic dealt a severe blow to the global economy. Both advanced, emerging, and developing economies suffered. Recovery was underway, though not yet complete, when the war in Ukraine erupted, leading to a significant downturn in global economic growth. Growth projections for 2022 and 2023 have been downgraded: in its January 2023 projection, the World Bank (WB) estimated that the 2022 global growth would only be 2.9 %, a considerable downgrade compared to its forecast one year earlier - and half of the 5.9% growth rate registered in 2021 (Table 3.1). As to 2023, the global growth rate is expected to go further down at about 1.7 %, and uncertainty remains very high as significant downside risks (fallouts from the COVID crisis and the unfolding of the war in Ukraine) remain preponderant.

Advanced economies are expected to register a significant decline of more than 50% compared to their 2021 growth (from 5.3 % in 2021 to 2.5 % in 2022), particularly marked in Europe, the region most directly impacted by the war in Ukraine. Depending on how the conflict will evolve, the projections may need to be downgraded again – with a recession looming in some major European countries.

Developing and emerging economies are not spared from the fallout of the new crisis, even if they are expected to do a little better than their advanced counterparts. Before the war in Ukraine, growth had begun to decelerate in the former, and the war accelerated this deceleration. The situation among economies differs (see section 1.3), depending on whether they are importers or exporters of commodities or how vulnerable they are to the many consequences of the war on commodity prices, inflation levels, global value chains, interest rates and financial vulnerability examined below.

Table 3.1. Growth rates (%), 2021 and projections for 2022

	2021 (registered)	Projections for 2022 (July 2021)	Estimates for 2022 (January 10, 2023)
World	5.9	4.1	**2.9**
Advanced economies	5.3	3.8	**2.5**
Emerging Market and Developing Economies	6.8	4.6	**3.4**

Source: World Bank, Global Economic Prospects, January 2022, and January 2023, accessed January 2023

3.2. Rising commodity prices, interest rates, and debt

The war in Ukraine has added to the rise in commodity prices registered since mid-2020 as concerns about COVID-19 receded, and activity rebounded in major economies (China, the U.S. and the E.U). The disruption of production in the war zones and the

sanctions imposed on Russia have dramatically impacted the supply of fuels and several agricultural products, such as cereals. Ukraine and Russia are key players in some agricultural markets – especially grains (such as wheat, maize, and barley) and oilseed. Together, they represent 53% of global trade in sunflower oil and seeds and 27% in wheat for instance (UNCTAD, 2022). The disruption in the supply of such commodities had a ripple effect on the price of other food products that can be used as alternatives. The export restrictions adopted by a few countries (such as India in the case of wheat), even if temporary, compounded the increase in global food prices. In the energy area, Russia accounts for 25% of global trade in natural gas (it is the second largest supplier of natural gas in the world) 20% in coal and more than 10% of crude oil. (World Bank, 2022). Ukraine is the largest exporter of neon gas, a critical input in the manufacturing of microchips. The impact of the Ukraine war on industrial and food production is bound to be broad-based.

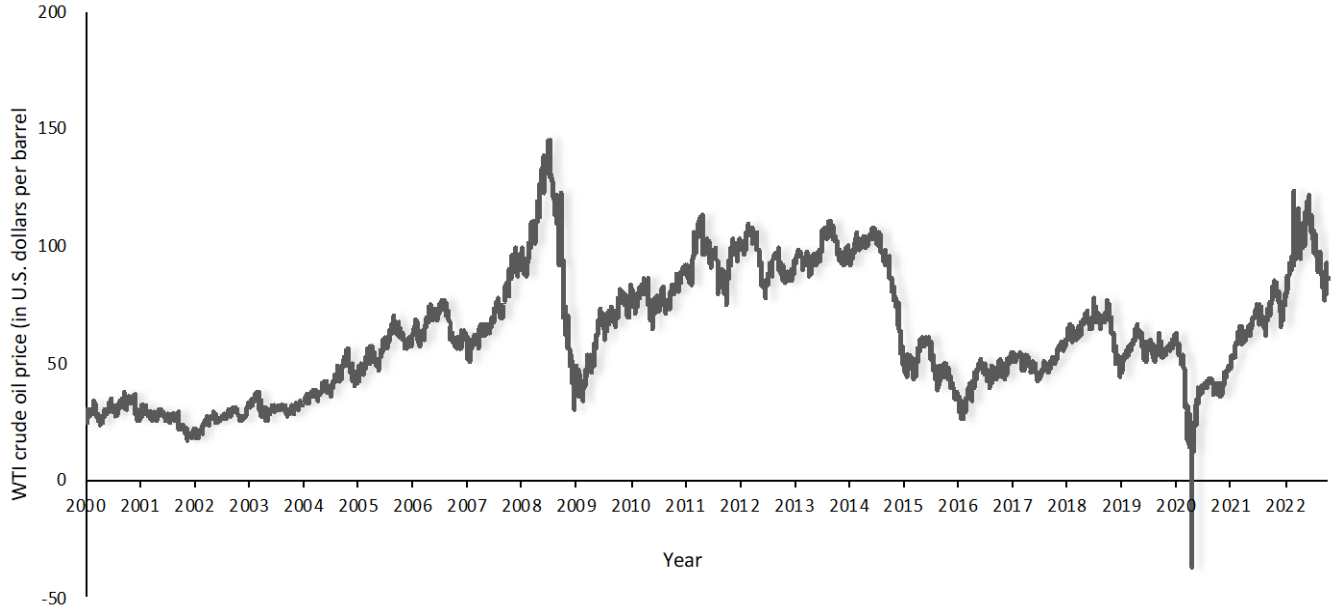
Commodity prices rose by 48.5 % over January – July 2022, largely on account of fuels, whose price rose by almost 90% over the period, reaching USD 120 a barrel at peak times (Table 3.2 and Figure 3.1). Oil prices slid over the summer - to barely 80 USD by the end of September-, largely due to mounting fears of a global recession. Some observers expect that they will soon return to 100 USD and remain elevated. One reason for this lies in the greater demand for fuels to be used for electricity generation in lieu of even costlier natural gas (Oilprice.com, 2022). Another reason is the oil production cut decided by OPEC in October 2022 to support prices.

Table 3.2. Percentage change in commodity prices

	2020	2021	January - July 2022
All commodities	-15.9	54.7	48.5
All food	6.6	29.9	8.8
Agricultural and raw materials	-2	13.5	-1.6
Minerals and metals	15.5	20.8	-16.5
Fuels	-32.2	85.8	86.6

Source: EMI research team, based on UNCTADStat and UNCTAD commodity price bulletin September 2022 for 2022

Figure 3.1. West Texas Intermediate (WTI) crude oil price from 2000 to 2022 (in USD per barrel)



Source: EMI research team based on data from U.S. Energy Information Administration (EIA), https://www.eia.gov/dnav/pet/hist/RWTCD.htm, accessed in Oct 2022

Inflation has been picking up since mid-2020, as economic activity rebounded amidst significant supply challenges and major hiccups in global transport and logistics. The war in Ukraine and additional lockdowns in China to halt new COVID outbreaks further fueled inflation. In April 2022, at almost 8 %, world inflation reached its highest levels since 2008 (World Bank, Global Economic Prospects April 2022). The hike in inflation – 7,8 % in advanced economies as of April 2022 - has been a shock for those economies that had been used to inflation rates falling anywhere between 2 and, at most, 3.8 % over the past thirty years. In emerging and developing economies, where the inflation rate is traditionally higher than in their advanced counterparts, the shock is also quite severe: at 9,4%, it is its highest level since 2008.

The return of inflation is leading central banks, both in emerging, developing, and advanced economies, to tighten monetary policy. Higher interest rates and the sharp dollar appreciation since the beginning of 2022 are likely to worsen the debt burden of many emerging and developing economies already substantially aggravated by the COVID crisis (see EMR 2020, Chapter 4). By

2021, the debt service ratio of many emerging economies in the E20+1 Group for instance had already reached 30% or more (Table 3.3). The Institute of International Finance forecasts that, by the end of 2022, the global debt ratio will reach 352% of GDP.

Table 3.3. Debt service ratios of selected emerging economies, 2019-2020

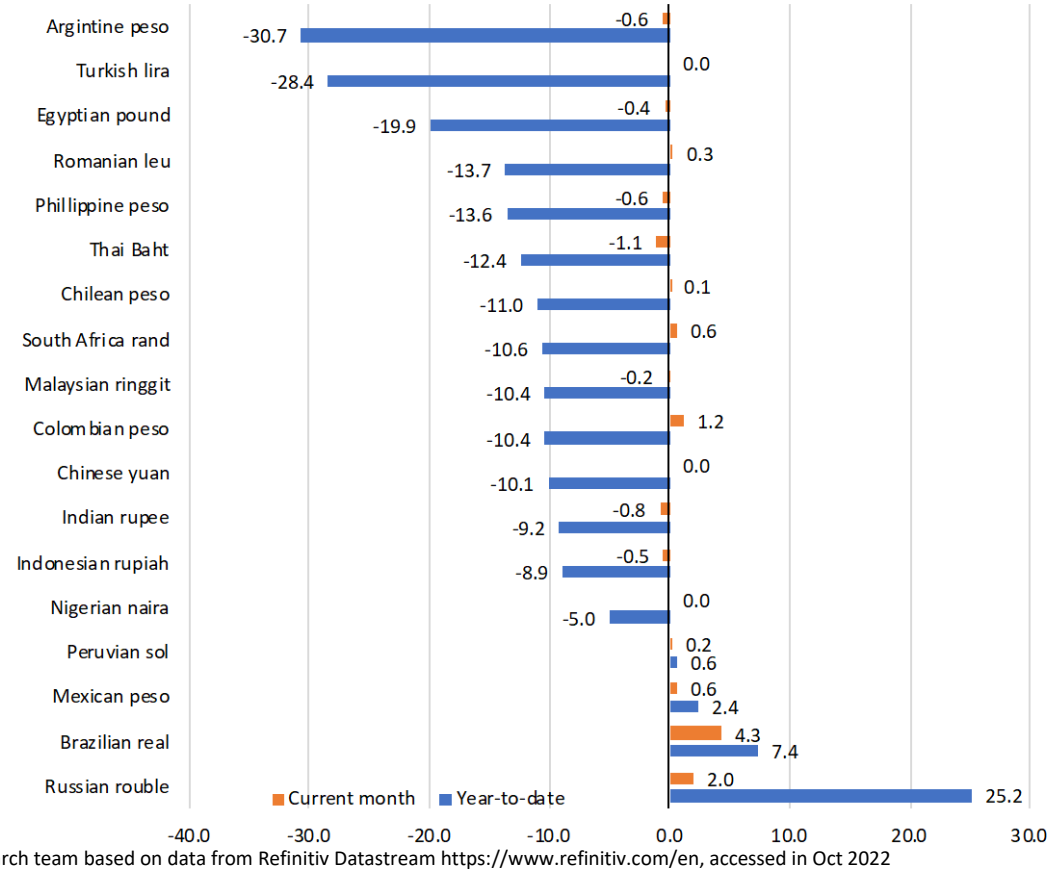
	2019	2020
Argentina	50,9	41,1
Brazil	53,2	50,6
China	9,5	9,2
Colombia	33,0	51,0
Egypt, Arab Rep.	16,1	29,5
Indonesia	39,4	36,7
India	9,0	15,0
Mexico	12,4	15,5
Nigeria	7,1	13,4
Pakistan	35,3	32,4
Philippines	9,7	10,1
Romania	17,8	20,4
Russian Federation	18,0	23,0
Turkey	34,6	41,3
South Africa	20,0	28,2

Source: EMI research team based on data from the World Bank, https://databank.worldbank.org/home.aspx, accessed October 2022

3.3. Emerging markets looking for alternatives: pioneering the adoption of crypto and CBDCs

As with the COVID crisis, currency markets have been deeply affected by the war in Ukraine. The return of inflation, even before the war, had already begun to lead to a tightening of monetary policies – a move spearheaded by the US Federal Reserve with significant interest rate increases. The impact is substantial, especially on advanced economies' currencies, with, for instance, the euro losing 14% vis a vis the dollar between January and September 2022, the Pound 18%, and the yen more than 20% – in a spiraling effect not seen for many years. Some emerging market currencies are also feeling the impact. India, for instance, lost 9% of its value against the dollar over the first nine months of 2022, and Turkey 30 % (see Figure 3.2). Latin America is faring better, but the currency volatility remains significant. The cost to the economy and the population is considerable.

Figure 3.2. Currency exchange rate of selected emerging economies, January –September 2022



Source: EMI research team based on data from Refinitiv Datastream https://www.refinitiv.com/en, accessed in Oct 2022

Currency volatility – with significant swings in value vis à vis the US dollar - is quite common in emerging markets. Such volatility is linked to the characteristics of their economies. For instance, commodity-exporting countries in Latin America and Africa often move through boom-and-bust cycles in line with commodity prices. Such volatility is also linked to global financial markets where, following the abandonment of the Gold Standard Exchange System in 1971, the USD has de facto become the gold standard.

Weak currencies are often at the root of major crises in emerging economies. They lead to higher interest rates, which negatively impact investment and, in turn, economic growth. They also lead to higher debt burdens through interest rate and exchange rate impacts. There are many examples of such a situation. The most famous ones include the case of Mexico in 1982, where the Latin American debt crisis started. Debt was in dollars and had to be repaid in devalued Mexican pesos. A similar situation happened in the 1997 Asian crisis that began with the collapse of the Thai currency, the baht. It spread to most of Southeast Asia, with currencies and stock markets plunging. Argentina is another case in point, with its most recent episode in June 2017 when Former President Macri issued USD 2.3 bn worth of debt, triggering a crisis because the Argentine peso's value collapsed, and the debt became unmanageable.

More recently, the COVID crisis battered several emerging economies' currencies: for instance, as the crisis unfolded, the Argentinian and Mexican pesos, the Brazilian real, the South African rand, and the Turkish lira declined significantly. By September 2020, Brazil's currency had lost 36% vis-a-vis the US dollar compared to January 2020, Argentina and Turkey 24%, South Africa 21%, and Mexico 16%. This was just an episode of a tumultuous history.

It is no coincidence, in this context, that emerging markets are pioneering the adoption of Central Bank Digital Currencies (CBDC) and cryptocurrencies. Both are digital currencies exchanged through computer networks and use encryption technologies. However, unlike cryptos, CBDCs are centralized, issued, and regulated by a central bank and pegged to a currency that can be the one of the country or a basket of currencies. By contrast, cryptocurrency is decentralized.

The adoption of CBDCs in emerging markets reflects the government's willingness to stabilize its domestic financial system. By introducing a CBDC, emerging markets aim at lowering their dependence on the dollar - especially when they have volatile and weak currencies. By pegging the value of the CBDC to the country's currency or a basket of currencies, they also seek to make the currency stable. In some cases, it's also a way for governments to respond to the increasing power of mobile payments provided by eCommerce platforms.

Just as in the case of the crypto experiment in El Salvador, CBDCs can also promote financial inclusion, which can help implement monetary and fiscal policies. However, unlike cash payments or, as mentioned above, unlike cryptos, CBDCs can be easily traced and are under the total control of governments

To date, all those that have launched a CBDC are emerging economies: Nigeria (with the e-Naira) is the largest of those economies (Box 3.1); the others are smaller size Caribbean economies. Most of the countries that have pilot-tested CBDCs are also emerging economies, including Saudi Arabia (with the Aber), South Africa, Russia, and Ghana. While India plans to launch its CBDC sometime in 2O22/2023, China launched its Digital Currency Electronic Payment (DCEP) on a pilot basis in April 2020, testing the e-yuan (or e-CNY) in several regions. China also operated it during the 2022 winter Olympics, using the event for a global presentation of the digital yuan and launching a trial with foreign visitors

The adoption of CBDCs can have far-reaching consequences:

- One is the possible development of alternatives to the dollar-based system. With the e-CNY, China is considering allowing its CBDC to be used for transactions around the world and, maybe, establishing the world's digital reserve currency. China is exploring cross-border transactions with digital currencies with Hong Kong, Thailand, the United Arab Emirates (UAE), among others.
- Another one relates to cryptocurrencies. As countries adopt CBDCs, they tend to ban the use of cryptocurrencies as they seek to stop whatever disrupts the introduction of digital currency. They don't always succeed, though.
- Finally, another broad-based and far-reaching consequence is the impact of CBDC on banking systems, a topic far beyond the scope of this report.

Box 3.1 – The e-naira

In October 2021 Nigeria's Central Bank introduced the e-Naira, at parity with the Nigerian currency, the Naira. Nigeria (and the Bahamas) is the first country in the world to launch a CBDC.

The eNaira uses blockchain technology, is stored in an eNaira digital wallet and is used for payments and transfers at no cost to anyone with an eNaira wallet. As 38percent of the Nigeria's population is unbanked, the government sought to promote with the eNaira greater financial inclusion, facilitate disbursements to the poor, lower the cost of remittances and reduce the size of the informal economy (estimated at about 80percent of Nigeria's economy). The motto was "Same Naira, more possibilities".

Source: Authors

Beyond CBDCs, emerging markets are also leading the way in the broad-based adoption of cryptocurrencies, as illustrated by El Salvador. In 2001, El Salvador dollarized its economy. Twenty years later, its president, Nayib Bukele, did not replace the dollar with the bitcoin but allowed both currencies to be used in parallel as legal tenders. Other Latin American countries - Panama (which is also dollarized), Cuba, Paraguay, and Venezuela - are exploring the possibility of doing the same. In April 2022, the Central African Republic became the second country in the world to adopt bitcoin as a legal tender, passing a law to this effect. The move was, however, faced with internal and external challenges (including opposition from the Bank of Central European African states, BEAC, and criticism from the IMF). Citing market conditions, the government announced by late 2022 that it would postpone the listing and release of the national cryptocurrency to 2023.

Surveys show that, in emerging economies, the use of cryptos is more common than one would expect. According to an IMF report (Global Financial Stability Report: COVID-19, Crypto, and Climate: Navigating Challenging Transitions, International Monetary Fund, October 2021) and following several surveys conducted asking citizens who own or have used cryptos, the five leading countries in the world are Nigeria with 32%, Vietnam 21%, Philippines 20% Turkiye and Peru with 16% of the population. These surveys show how eager citizens from EMs are to find alternatives to their volatile currencies. One can expect that many of the pioneering applications of Cryptos and digital currencies will be endorsed first in emerging markets and then be adapted for developed markets.

Nevertheless, the value of cryptos is volatile. In the first crypto winter in January 2018, such value dropped by 65%. Since then, crypto usage has spread, but it has been largely unregulated and has triggered the so-called second Crypto winter: between November 2021 and July 2022, the crypto's value fell by 80%, losing USD 2 trillion in total. In this context, IMF and other multilateral organizations are exploring the need for regulation of this space. In November 2022, the crypto market was shaken by the collapse of the largest cryptocurrency exchange, FTX, valued, at some point, at USD 32 billion. While some analysts faulted fraud, embezzlement and mismanagement, the fall of FTX further questioned the value of crypto and shattered investors' confidence. As a result, several crypto exchanges filed for bankruptcy and the value of crypto dropped further. Bitcoin for instance lost about 20% of its value in just one week to USD 16,000 compared to USD 60,000 the year before. Similarly, the price of Ethereum bell by about a third to USD 1,100 and that of Solana by 50% to about USD 14

Events such as the FTX collapse are leading to renewed calls for regulatory agencies to step in to regulate the crypto industry. In the same vein, in July 2022, to prevent collapses and the loss of assets by investors, the European Union introduced regulation, the Markets in Crypto-Assets (MICA) regulation. IMF and other multilateral organizations are also exploring the need to control the space.

3.4. Emerging economies: all are affected by uncertainty, but situations differ

As in the past, and in line with the approach followed since the creation of the Emerging Market Multinationals Report in 2016, we will examine the situation of emerging economies considering development in the E20 +1 countries (see box 4), a group of top 20 emerging economies plus China set up by EMI to examine trends in emerging markets and merging market multinationals (Box 3.2). In 2022, the list of the E20+1" includes the following countries (in alphabetical order): *Argentina, Bangladesh, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Romania, Russian Federation, Saudi Arabia, South Africa, Thailand, Turkey, and Vietnam.*

Eight emerging economies are among the 20 largest in the world, based on their 2021 nominal GDP (Table 3.3). For several years now, China is the second-largest economy after the United States. Over the past decade, India moved several ranks to reach the 6th position in 2021, over France and very close to the United Kingdom. In 2019, India even surpassed the UK with the fifth-largest GDP in the world. On the other hand, Brazil slid from ranking 7th in 2010 to ranking 12 in 2021.

Box 3.2 – The 2022 list of the E20+1

When EMI launched its first Report on Emerging Market Multinationals in 2016, it established a group of the top 20 emerging economies – the EMI E20" – that became last year the E20+1", or E20+China, to highlight the unique position of China among emerging economies (EMR 2021).

The methodology used to set up the E20+1 list this year remains the same:

- First, the following countries were excluded: Countries considered advanced economies by the IMF, countries whose population is less than 1.5mm, countries for which GDP data (from World Bank sources) are older than three years
- A weighted score was calculated for the remaining countries based on the following variables: a) GDP per capita (weight 0,4) b) Global trade (weight 0,1) c) Poverty level (weight 0,2), and d) extreme poverty level (weight 0,3). On this basis, a list of emerging countries was established.
- Countries were then ranked by real GDP. China and the following 20 laregst economies constitute the EMI's "E20+1" or "E20+China" list.

The table below (Table 3.4) provides the 2022 list of EMI's "E20+1" Group.

Table 3.4. The E20+1 list (GDP in USD bi)

0	China	Asia	17,734	10	Nigeria	Africa	441
1	India	Asia	3,173	11	South Africa	Africa	420
2	Russian Federation	Europe	1,776	12	Bangladesh	Asia	416
3	Brazil	Latin America & Caribbean	1,609	13	Egypt, Arab Rep.	Africa	404
4	Mexico	Latin America & Caribbean	1,293	14	Philippines	Asia	394
5	Indonesia	Asia	1,186	15	Malaysia	Asia	373
6	Saudi Arabia	Asia (West Asia)	834	16	Vietnam	Asia	363
7	Turkey	Asia (West Asia)	815	17	Pakistan	Asia	346
8	Thailand	Asia	506	18	Chile	Latin America & Caribbean	317
9	Argentina	Latin America & Caribbean	491	19	Colombia	Latin America & Caribbean	314
				20	Romania	Europe	284

There is virtually no change in the list compared to 2021, except for Iran, due to data issues. There is a significant gap between the World Bank GDP data estimates for Iran (USD231 billion) and the IMF data (USD 1739 billion). As per World Bank data, Iran's 2021 GDP is ranked 22nd in the list this year, compared to 14th in 2021. Based on IMF data, Iran's GDP jumps to rank four above Brazil and Mexico. The main reason lies in the exchange rate used for the estimate: the official exchange rate in the case of the IMF; and an alternative conversion rate in the case of the World Bank. Because of this discrepancy, Iran is not part of the E20 list this year, while Romania has entered.

Source: Authors based on EMI Research team

Table 3.5. The 20 largest economies in the world, 2010 and 2021, ranked by nominal GDP

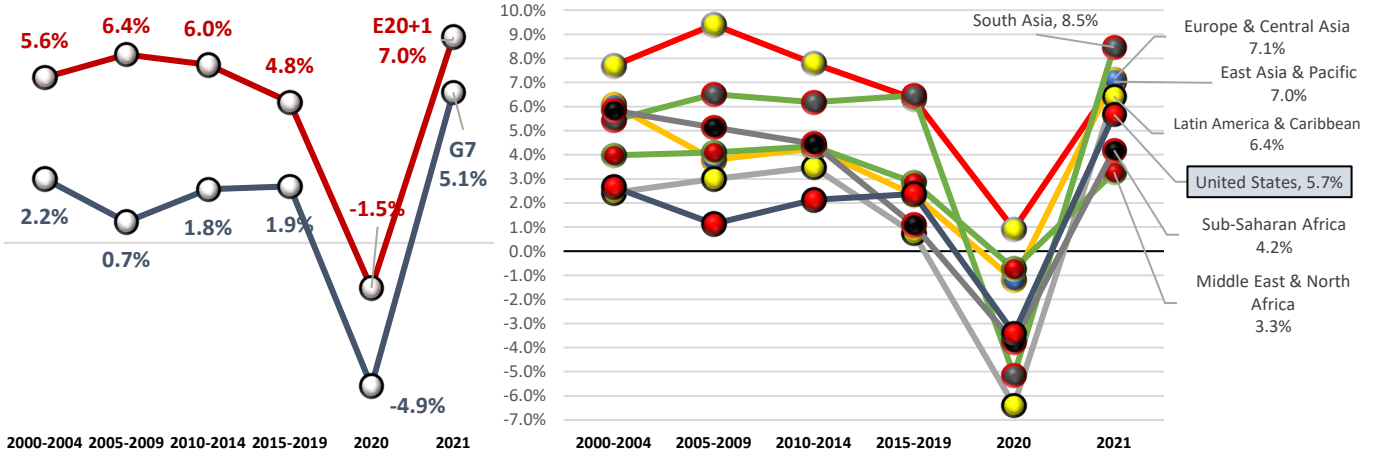
2010	Country	GDP (USD bi) Nominal	GDP per capita (USD)	2021	Country	GDP (USD bi) Nominal	GDP per capita (USD)
1	United States	15,049	48,651	1	United States	22,996	69,288
2	China	6,087	4,550	2	China	17,734	12,556
3	Japan	5,759	44,968	3	Japan	4,937	39,285
4	Germany	3,400	41,572	4	Germany	4,223	50,802
5	France	2,645	40,678	5	United Kingdom	3,187	47,334
6	United Kingdom	2,491	39,689	6	India	3,173	2,277
7	Brazil	2,209	11,286	7	France	2,937	43,519
8	Italy	2,136	36,036	8	Italy	2,100	35,551
9	India	1,676	1,358	9	Canada	1,991	52,051
10	Canada	1,617	47,562	10	Korea, Rep.	1,799	34,758
11	Russian Federation	1,525	10,675	11	Russian Federation	1,776	12,173
12	Spain	1,422	30,532	12	Brazil	1,609	7,519
13	Australia	1,148	52,088	13	Australia	1,543	59,934
14	Korea, Rep.	1,144	23,087	14	Spain	1,425	30,116
15	Mexico	1,058	9,271	15	Mexico	1,293	9,926
16	Netherlands	847	51,000	16	Indonesia	1,186	4,292
17	Turkey	777	10,743	17	Netherlands	1,018	58,061
18	Indonesia	755	3,122	18	Saudi Arabia	834	23,586
19	Switzerland	603	77,117	19	Turkey	815	9,587
20	Saudi Arabia	528	19,263	20	Switzerland	813	93,457

Note: In red: E20+1 economies; in dark blue: G7 economies

Source: EMI research team, based on data from the World Bank, nominal GDP

Emerging economies registered a significant rebound in 2021 as the COVID pandemic subsided, with a growth rate exceeding 7% as economies recovered from their 2020 fall. The gap with advanced economies, however, continued to narrow; at less than two percentage points, it is the smallest of the past twenty years (Figure 3.3)

Figure 3.3. E20+1 and G7 countries, GDP Growth from 2000 - 2021



Source: EMI research team based on World Bank data https://databank.worldbank.org/home.aspx, accessed August 2022

The war in Ukraine will necessarily impact emerging economies. However, some of these economies are among the largest commodity and oil producers, while others are major importers of such products. Some are significantly involved in global value chains and depend upon the proper functioning of such networks; others are much less dependent. These differences partly explain the diversity of situations among emerging economies.

- *Asia* experienced a significant economic rebound in 2021, partly led by China and other countries like India, Bangladesh, and Pakistan (Figure 3.4). The war in Ukraine has not had major direct impacts on emerging Asia, and the projected growth rates of most emerging Asian economies are like those registered in 2015-2019, or even higher in a few cases. China is an exception: the marked slowdown in its economic growth rate largely reflects the impact of the lockdowns imposed in some key regions of the country to fight renewed outbreaks of COVID. Most E20 Asian countries are expected to register a higher growth rate than China, a first over the past two decades.

The performance of Vietnam is worth noting, with the highest growth rate in the region in the late 2010s and one of the highest expected performances in 2022. India's trajectory is also quite noticeable. More affected than China by the COVID crisis in 2020, India registered - as China – a remarkable rebound in 2021: its growth rate reached almost 9% growth rate. In 2022, it has not followed the same stringent COVID policy as the latter, thereby avoiding the negative consequences of severe lockdowns on economic activity. Yet, the war in Ukraine is indirectly impacting India's growing economy through higher commodity prices and rising broad-based inflation. The country imports more than 80% of its crude oil needs. However, its projected growth rate for 2022 at 6.9 % remains one the highest in the region – and among emerging economies. Thailand is already significantly impacted by dwindling tourism revenues due to the pandemic, and Turkiye is also feeling the cost of higher commodity prices. With a growth rate falling from 11.4 % in 2021 to 4.7% in 2022, Turkiye's growth is still far from its pre-pandemic levels (Figure 3.4). On the other hand, oil exporters such as Saudi Arabia - and to a lesser extent Indonesia - will benefit from the impact of the war on oil prices.

- As in the case of Asia, the direct effects of the war in Ukraine are relatively limited on emerging economies in *Latin America,* but indirect effects may mitigate some of the positive impacts. On the one hand, the rise in agricultural prices should benefit major economies such as Argentina and Brazil, which are major exporters of such commodities. Still, the increase in the price of fertilizers and other inputs will likely dampen such benefits. Brazil, for instance, imports 80% of its fertilizers, and Argentina close to 70% (World Bank, 2022b). Conversely, Colombia is expected to substantially benefit from higher oil and coal prices. However, as important for many economies in the region is the expected slowdown in global demand, especially from China - the largest export market of many Latin American countries - and some major advanced economies in the EU and the U.S.

- In *Africa*, the rise in energy prices benefits oil and gas producers, though economies are not always well equipped to benefit from the situation. For instance, in Sub-Saharan Africa, the rise in oil prices could provide a welcome boost to Nigeria, the continent's largest oil producer. Still, the country faces production challenges (infrastructure issues, limited refining capabilities, etc.). On the other hand, elevated food prices and high inflation will weigh significantly on consumption and eventually constrain growth. The estimated growth rate (at about 3.1% for 2022) is a notable increase compared to the poor performance of the second half of the past decade, but still far from its level ten years ago (Figure 3.4). The other big economy of the region, South Africa, is taking heads on the indirect impact of the war in Ukraine through increased food prices. Finally, the third African country in the E20+1, Egypt, will be significantly impacted by surging food commodity prices, such as cereal prices and seed oil. Egypt is the largest wheat importer in the world, and Russia and Ukraine are its top suppliers. Additional factors will affect the Egyptian economy. One is a slowdown in world trade, which is bound to impact traffic on the Suez Canal. The other is the loss of tourists from Russia and Ukraine, which are among the biggest suppliers of Egypt's tourists. On the other

hand, the rise in energy prices may have some positive impact since the country has achieved self-sufficiency in gas production since 2017 and managed to resume exports in 2018. In addition, increased remittances and investment from Gulf countries are expected – which would help support the economy. Its growth rate is estimated to reach 6.6 % in 2022 and 4.5 % in 2023.

- The impact of the war is, not surprisingly, going to be the largest in *European* emerging economies. Russia is expected to register a GDP fall (– 3.5 %) which is less, however, than the - 8.5 % initially anticipated by the IMF in April 2022.

3.5. Global value chains after COVID and Ukraine war

Internationalization of production characterizes the evolution of the world economy over the past half-century. Global value chains have played a major role in this process, experiencing a remarkable expansion from the early 1980s up to the Global Financial Crisis in 2008 [8].

In global value chains, the different stages of production i.e., the different activities along the production chain – from design to manufacturing, marketing, delivery, and customer support, are distributed across the world in different locations, selected based on their comparative advantages. The lower cost of labor is one such advantage. The fast expansion of global value chains has largely been driven by multinationals from advanced economies relocating or outsourcing the most labor-intensive phases of their production process to low-wage emerging and developing economies. In addition to low transport costs and a large open trading environment, the fall in technology and communication costs was also a crucial factor behind the fast expansion of GVCs. According to UNCTAD, by 2013, about 60% of global trade was accounted for by trade of intermediate goods and services (WIR 2013).

Since the Global Financial Crisis, the growth of GVCs has slowed down. It may not be so surprising that the unbridled pace of globalization of the previous decades could not be maintained, if only for the anti-globalization sentiment and the protectionist policies that it eventually triggered in advanced economies. The US-China trade war that broke out in 2018 is only one of the most visible signs of such a change, significantly upholding a global environment that had been very beneficial to globalization till then. In addition, conditions have changed in one of the main drivers of Global Value Chain expansion, China. Labor cost has been rising. Moreover, China currently depends less on imported intermediate goods for its exports than it did in the past, producing many more of the inputs that go into its exports. Furthermore, in many cases, the Chinese domestic market now absorbs the largest share of the country's production (WTO, 2021).

While the deceleration of the GVC expansion is nothing new, the COVID crisis and the war in Ukraine have been massive shocks to global trade and exposed the vulnerabilities of global value chains.

The COVID crisis was more of a supply crisis. It had a major impact on consumers and public opinions globally – partly because it affected the health sector (ingredients for medicines were a case in point). Populations became acutely aware of the situation – leading in many quarters to calls for economic sovereignty and the return of strategic industries back home. Following the COVID crisis, GVCs moved from efficiency-based strategies to resilience. However, and as in the past (e.g., in the years following the flood in Thailand or the tsunami in Japan for instance) the overall GVC model did not fundamentally change. Enterprises addressed the GVC vulnerabilities mainly through diversification and technology rather than large-scale re-shoring (McKinsey Global Institute, 2020).

The consequences of the war in Ukraine for GVCs are no less significant than the COVID crisis, far from it. Indeed, beyond the impact on agricultural commodities and related supply chains, a major channel of transmission is energy (oil and gas). Because of the crucial role of energy in the production of any goods and services, and in transport and logistics, the impact of the war may even be even more broad-based and long-lasting than the COVID crisis: in virtually all sectors, all along the supply chains, activities are likely to be affected, if only due to transport costs. It is challenging to foresee how the war, a geopolitical event with multiple forces at work, will unfold but it is profoundly changing the GVC equation. For instance, physical distance is likely to come back as a prominent parameter in business decisions. It hence may not necessarily favor re-shoring, but most likely near-shoring.

3.6. Emerging markets entering uncharted territories

The global economy is reeling from one crisis to another. The COVID pandemic was not over yet when the war in Ukraine erupted, another crisis adding to the uncertainty of the times. Growth projections for the global economy in 2022 reflect this, with another fall forecasted for 2022 to around 3 percent, half of the 2021 performance. Clearly, all are not affected in the same way. Among emerging economies, some - mainly oil, gas, and commodity producers - will fare better, while others will pay the price through increasingly expensive energy and food products.

[8] On global value chains see Gary Gereffi, a pioneer of GVC analysis who introduced the concept of « Global Commodity Chains » in 1994, (Gereffi, 1994; Gereffi, Humphrey and Sturgeon, 2005; and Gereffi 2018); see also Coe and Hess, 2007; Baldwin (2016; Baldwin and Freeman (2021), Subramanian and Kessler (2013), World Bank (2020) and WTO (2021), among others.

Both the COVID crisis and the war in Ukraine have reverberated on all economies in the world because of their spillover effects. Disruption in global value chains in that respect has been a major channel of transmission. It is not clear yet how the conflict in Ukraine will unfold, but it is substantially impacting supply chains – if only because transport costs have surged, reminding us of the key role of distance in economic life. The ripple effect on emerging economies could be substantial because participation in GVCs had been crucial in the economic growth of many of these economies. Added to that is the slowdown in global demand due to the highly uncertain global environment.

The world economy and emerging markets are entering unchartered territories. Not only because of the falls out of the COVID crisis and war in Ukraine, not only because global value chains are changing, but also because of developments in key protagonists in the world, such as China whose growth engine is slowing.

References

Baldwin, R., 2012. Global supply chains: Why they emerged, why they matter, and where they are going, CEPR Discussions Paper 9103, C.E.P.R. Discussion Papers.
Baldwin, R. and Freeman, R., Risks and Global Supply Chains: What We Know and What We Need to Know (October 2021). CEPR Discussion Paper No. DP16672, Available at SSRN: https://ssrn.com/abstract=3960276
Coe, N.M. and M. Hess (2007), "Global production networks: debates and challenges", paper prepared for the GPERG Workshop, Manchester, University of Manchester
The Economist, 24 January 2019, "The steam has gone out of globalization"
Gereffi, G. (1994), "The organization of buyer-driven global commodity chains:
how U.S. retailers shape overseas production networks", Commodity Chains
and Global Capitalism, G. Gereffi and M. Korzeniewicz (eds.), Westport,
Praeger Publishers.
Gereffi, G. and K. Fernandez-Stark (2011), Global Value Chain Analysis: A Primer,
Center on Globalization, Governance & Competitiveness (CGGC), Durham,
North Carolina, Duke University.
Gereffi, G., J. Humphrey and T. Sturgeon (2005), "The governance of global value
chains", Review of International Political Economy, vol. 12, No. 1, Taylor & Francis.WTO,
Gereffi, G. (2018). Global Value Chains and Development: Redefining the Contours of 21st Century Capitalism (Development Trajectories in Global Value Chains). Cambridge: Cambridge University Press. doi:10.1017/9781108559423
Mac Kinsey Global Institute, 2020, McKinsey Global Institute. 2020. "Risk, Resilience, and Rebalancing in Global Value Chains."
https://www.mckinsey.com/capabilities/operations/our-insights/risk-resilience-and-rebalancing-in-global-value-chains#0
Oilprice.com, 26 September 2022, https://oilprice.com/Energy/Oil-Prices/Oil-Prices-Are-About-To-Reverse-Course.html
Sharpe, M. 2009. Playing to Win in the New Software Market-Software 2.0: Winning for Europe. Report of an Industry Expert Group on European Software Strategy. Brussels: Industry Expert Group on European Software Strategy.
Subramanian, A., and M. Kessler. 2013. The Hyperglobalization of Trade and Its Future. Working Paper Series No. 13-6. Washington, DC: Peterson Institute for International Economics.
UNCTAD, 2013, World Investment Report, Global Value Chains: Investment and Trade for Development, United Nations, Geneva
UNCTAD, 2022, The impact on trade and development of the war in Ukraine, UNCTAD rapid assessment, 16 March 2022,
https://unctad.org/system/files/official-document/osginf2022d1_en.pdf
World Bank, 2020, World Development Report 2020: Trading for Development in the Age of Global Value Chains. World Bank Group, 2020.
World Bank 2022, Global Economic Prospects, June 2022, The World Bank Group
World Trade Organization, Global Value Chain Development Report 2021, Beyond Production, November 2021

Appendix

Figure 3.4. GDP growth: E20+1 and G7 countries, 2000 - 2021, 2022 estimates and 2023 projections (grey negative growth, blue positive growth)

	2000-2004	2005-2009	2010-2014	2015-2019	2020	2021	2022p	2023p
E20+1	5.6%	6.4%	6.0%	4.8%	-1.5%	7.0%		
East Asia & Pacific (E20+1)	7.7%	9.4%	7.8%	6.3%	0.9%	7.0%		
China	9.2%	11.5%	8.6%	6.7%	2.2%	8.1%	2.7%	4.3%
Indonesia	4.6%	5.6%	5.8%	5.0%	-2.1%	3.7%	5.2%	4.8%
Malaysia	5.4%	4.1%	5.8%	4.9%	-5.6%	3.1%	7.8%	4.0%
Philippines	4.6%	4.5%	6.2%	6.6%	-9.5%	5.7%	7.2%	5.4%
Thailand	5.5%	3.1%	3.8%	3.4%	-6.2%	1.6%	3.4%	3.6%
Vietnam	6.7%	6.5%	6.1%	7.0%	2.9%	2.6%	7.2%	6.3%
Europe & Central Asia (E20+1)	6.1%	3.8%	4.2%	2.3%	-1.2%	7.1%		
Romania	5.2%	4.6%	1.4%	4.7%	-3.7%	5.9%	4.6%	2.6%
Russian Federation	6.8%	3.9%	3.1%	1.0%	-2.7%	4.8%	-3.5%	-3.3%
Turkiye	4.5%	3.3%	7.5%	4.1%	1.8%	11.0%	4.7%	2.7%
Latin America & Caribbean (E20+1)	2.4%	3.0%	3.5%	0.7%	-6.4%	6.4%		
Argentina	0.1%	4.6%	2.9%	-0.3%	-9.9%	10.3%	5.2%	2.0%
Brazil	3.1%	3.6%	3.4%	-0.5%	-3.9%	4.6%	3.0%	0.8%
Chile	4.5%	3.9%	4.7%	2.0%	-6.0%	11.7%	2.1%	-0.9%
Colombia	3.3%	4.5%	5.0%	2.4%	-7.0%	10.6%	8.0%	1.3%
Mexico	2.0%	0.9%	3.3%	2.0%	-8.2%	4.8%	2.6%	0.9%
Middle East & North Africa (E20+1)	4.0%	4.1%	4.3%	2.9%	-0.7%	3.3%		
Egypt, Arab Rep.	3.9%	6.0%	2.8%	4.8%	3.6%	3.3%	6.6%	4.5%
Saudi Arabia	4.0%	2.8%	5.3%	1.6%	-4.1%	3.2%	8.3%	3.7%
South Asia (E20+1)	5.4%	6.5%	6.2%	6.5%	-5.1%	8.5%		
Bangladesh*	4.8%	6.3%	6.1%	7.1%	3.4%	6.9%	7.2%	5.2%
India	5.6%	6.9%	6.6%	6.6%	-6.6%	8.9%	6.9%	6.6%
Pakistan	4.7%	4.3%	3.4%	4.7%	-1.3%	6.0%	6.0%	2.0%
Sub-Saharan Africa	4.9%	5.3%	4.5%	2.4%	-2.0%	4.1%		
Sub-Saharan Africa (E20+1)	5.8%	5.1%	4.4%	1.1%	-3.8%	4.2%		
Nigeria	8.5%	6.8%	6.1%	1.2%	-1.8%	3.6%	3.1%	2.9%
South Africa	3.6%	3.5%	2.5%	0.9%	-6.4%	4.9%	1.9%	1.4%
G7	2.2%	0.7%	1.8%	1.9%	-4.9%	5.1%		
Canada	3.5%	2.8%	2.6%	1.9%	-5.2%	4.6%		
France	2.1%	0.8%	1.2%	1.6%	-7.9%	7.0%		
Germany	1.0%	0.5%	2.2%	1.7%	-4.6%	2.9%		
Italy	1.5%	-0.5%	-0.5%	1.0%	-9.0%	6.6%		
Japan	1.4%	-0.5%	1.5%	0.9%	-4.5%	1.6%	1.2%	1.0%
U.K.	2.6%	0.6%	2.0%	2.1%	-9.3%	7.4%		
U.S.	2.7%	1.1%	2.1%	2.4%	-3.4%	5.7%	1.9%	0.5%

* Bangladesh projections based on other Emerging and Developing Asia countries by IMF.

Source: EMI Research Team, based on data from the World Bank, and IMF projections for 2022 and 2023

Chapter 4

EMERGING MARKETS ECONOMIC GROWTH AND ESG (EMI D-ESG) COUNTRY RANKING 2022[9]

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Executive Summary

This chapter attempts to measure sustainable growth in emerging economies and compare them. The – Economic Growth (D), Environmental (E), Social (S), and Governance (G) ranking explores the 21 "EMI "E20+1 (China)" countries' combined performance in economic growth and ESG. The goal is to develop a framework with several variables in those four pillars adapted to the Emerging Market realities and measure their progress. Ultimately provide some guidelines in this matter.

Keywords: Environmental variables, social variables, Governance variables, D-ESG, Development, Economic Growth, Economic Development

4.1. Goals of an Emerging Market EMI D-ESG ranking

The Emerging Markets Economic Growth and ESG (EMI D-ESG) Country Ranking by Cornell's Emerging Markets Institute at the Cornell S.C. Johnson College of Business is a unique country classification because:

- Its Emerging Markets focus
- It combines economic growth (D) and ESG variables (D-ESG)
- It measures progress over ten years between 2011 and 2021 (or the latest available data)

The D-ESG ranking analysis of the Emerging Market Countries of the E2O+1 group, namely, **Argentina, Bangladesh, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Romania, Russia, Saudi Arabia, South Africa, Thailand, Turkiye, and Vietnam** from an **Economic Growth, Environmental, Social** and **Governance** (D-ESG) perspective. An Emerging Country is often evaluated through the lenses of a developed nation; in the case of ESG, it is no different. The EMI D-ESG Ranking project is an initiative to bridge this gap: we compare emerging economies among themselves. It is a ranking whose framework is designed with an Emerging Market focus. Such a focus is central for the variable selection process and for Emerging Markets comparison amongst its own peer group and not against advanced nations.

The second principle that guides our work is that Economic Growth and ESG are intertwined and inseparable. While most rankings are either based on "economic growth" or "ESG", we believe that the two concepts are linked together. The EMI D-ESG Ranking aims at providing a more complete picture of a country's achievements by combining both. Hence, the EMI D-ESG Ranking combines D (economic growth) with E (Environmental), S (Social), and G (Governance) with the purpose to encourage and measure sustainable growth in emerging markets.

Measuring Progress over time in Emerging Economies is also a key theme of the EMI D-ESG Rankings. Indeed, it is one thing to see where a country currently stands in terms of economic development and ESG indicators; and another one to see where it is coming from i.e. how much it has improved over time. By doing so, we present an "average" score for growth and current

[9] The authors want to acknowledge the contributions of Julian Galarza, Christian Goranov, Travis Thai and Noel Lui, Daniel dos Anjos, Nikita Dahiya, Sri Ravisankar, (Cornell students) and Juan Pablo Borda and Maria Alejandra Perez (students at Universidad de los Andes in Colombia and summer interns at EMI). The research team was lead by Shailja Bang Shah. This exercise would have not been possible without the help of the economists: Gautam Jain, Rafael Escalona Reynoso and Antoni Estevadeordal. The feedback from the Ernst and Young's Team for Inclusive ESG for Emerging Markets, Economist Intelligence Unit's ESG Rating team, EU commission JRC, EMI Faculty Advisory Council, EMI Faculty Advisory Board is gratefully acknowledged. This ranking builds on a previous one with similar criteria (emerging markets comparing among themselves and social variables included) published in Casanova and Miroux 2020 developed with Mihika Badjate and Andrew Lim.

standing. The ranking is provided after analyzing data over a period of **10 years** (2011-2021) across **27 variables** divided under the **four pillars mentioned above.**

The EMI D-ESG Four Pillars are as follows

"D" – Stands for the Economic Growth Pillar (or Economic Development)
"E" – Stands for the Environmental Pillar
"S" – Stands for the Social Pillar
"G" – Stands for the Governance Pillar
The key objectives of the EMI D-ESG are as follows:

1. To create a framework for rating an Emerging Economy for Economic Growth, Environment, Social, and Governance variables.
2. To measure a country's progress (between 2011 and 2021) while also considering where it stands compared to its peer group.
3. To be easy to use and transparent.
4. To provide a roadmap for Emerging Markets to navigate the ESG space

As noted above, the D-ESG Rankings compare the E20+1 group of countries among themselves and not with advanced economies. Even though the same metrics have been used to score G7 nations (see Appendix), such scores are only for reference purposes and have not been the basis of our analysis.

This chapter presents a first approach to the phenomenon and is organized as follows. Because of simplicity, we first present the framework, the variables, and the key results while we dwell on the ins and outs of the methodology in the last section and in the appendixes.

4.2. Framework and variables

A differentiating factor of the D-ESG Country Ranking is, as mentioned above, that we consider not only the progress (or lack of thereof) of emerging countries for a particular indicator but also their "Current Standing" for that variable. The goal is to measure a country's progress while also considering where it stands at present, compared to its peer group (see Figure 4.1). Exceptional cases where this approach is not possible because of a lack of data are mentioned in the latter part of this chapter (see section 5.1).

Figure 4.1. The Framework

Source: Authors

The research process was as follows (see Figure 4.2). The

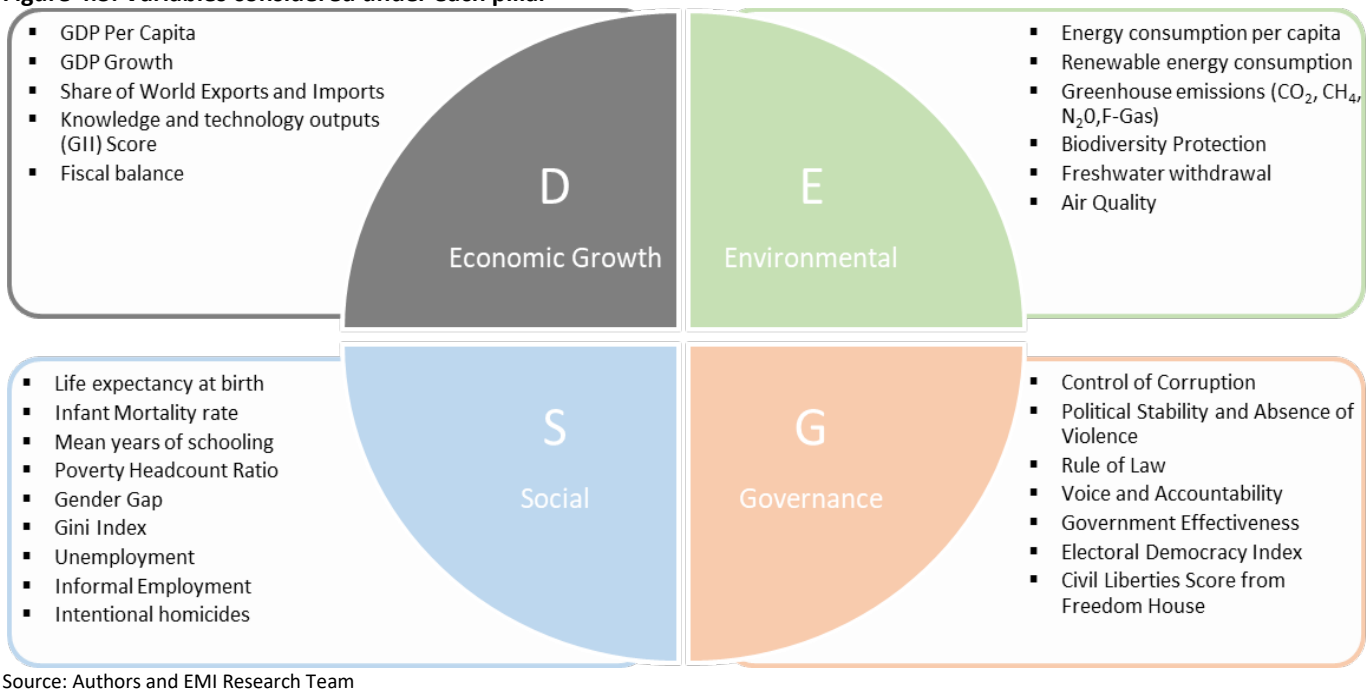
- Starting point was the 2022 list of E20 + 1 countries (see Chapter 3)
- Choosing the variables which are fundamental for an emerging market
- Progress Over a ten-year period (2011 and 2021)
- Current 2021 data (or latest available)
- Calculating the average of growth and current data for each variable
- Assessing the weight for each variable
- Assessing the weight of the pillars
- Calculating Final D-ESG score per country

Figure 4.2. D-ESG process

Source: Authors and EMI Research Team

The variables included in each pillar are listed in Figure 4.3 (for more see section 5).

Figure 4.3. Variables considered under each pillar

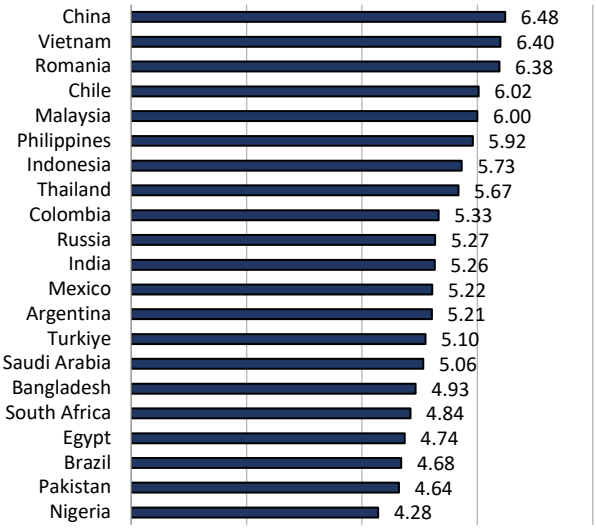


Source: Authors and EMI Research Team

4.3. EMI D-ESG Results and Key Findings

The final results of the D-ESG Ranking exercise for the E20+1 list of countries, combining growth (over 2011 - 2021) and current standing across the 4 pillars (D, E, S, G), are presented in Figure 4.4 and a detailed pillar-based breakdown of the scores is presented in Table 4.1. China leads the ranking followed by Vietnam, Romania, Chile, and Malaysia. Among the eight best-ranked countries, six are from Asia which reflects the growth dynamism of this continent and their efforts to improve social, environmental and governance indicators.

Figure 4.4. EMI D-ESG Combined Ranking and 2022 Scores



Note: the numbers on the right are the scores achieved by each country
Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

China leads the ranking with a score of 6.48, followed by Vietnam at 6.40 and Romania at 6.38. The average EMI D-ESG combined score for the E20+1 is 5.39 (See Table 4.2). Though achieving similar final scores, China, Vietnam and Romania perform differently when compared at the pillar level. While China is better at Economic Growth, Romania has a stronger ESG performance and Vietnam is more balanced in its scores. Romania, Chile and Malaysia have the same performance in the Economic Growth pillar; the difference between these countries lies in their Environment, Social, and Governance scores.

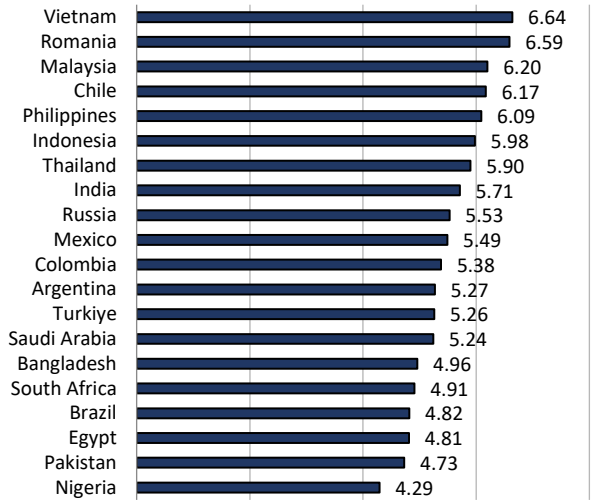
Table 4.1. EMI D-ESG Pillar Scores

E20 +1 Group	Economic Growth Score	Environmental Score	Social Score	Governance Score	D-ESG Combined Score
China	7.90	4.98	6.20	6.45	6.48
Vietnam	6.60	6.28	6.45	6.20	6.40
Romania	4.90	6.08	7.05	7.90	6.38
Chile	4.90	6.25	6.70	6.55	6.02
Malaysia	4.90	4.76	7.05	7.60	6.00
Philippines	5.80	6.87	6.15	4.90	5.92
Indonesia	4.30	5.72	6.35	6.95	5.73
Thailand	4.60	6.08	6.95	5.35	5.67
Colombia	3.60	7.20	5.30	5.70	5.33
Russia	4.60	5.11	7.25	4.30	5.27
India	4.60	5.27	5.60	5.75	5.26
Mexico	4.40	6.88	5.85	4.00	5.22
Argentina	2.70	5.99	6.50	6.35	5.21
Turkiye	5.80	5.42	6.55	2.45	5.10
Saudi Arabia	3.40	5.02	5.80	6.50	5.06
Bangladesh	4.70	5.29	5.60	4.20	4.93
South Africa	3.00	5.58	5.00	6.30	4.84
Egypt	3.50	5.61	6.15	4.05	4.74
Brazil	2.60	6.58	5.85	4.30	4.68
Pakistan	3.80	5.36	4.25	5.40	4.64
Nigeria	2.30	5.74	4.90	4.75	4.28
Average E20+1 Combined D-ESG Score	4.42	5.81	6.07	5.52	5.39

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

China's economic growth over the last 10 years has a significant outlier effect on the scores and the ranking (see section 3.1). For instance, as shown in Table 4.1, China's score of 7.9 in economic growth is way above the average of 4.4 for all E20+1 countries. Therefore, we repeated the D-ESG ranking exercise, separating China from the list. The ranking below is based on the combined score for growth and current standing across all 4 pillars (D, E, S, G) for the E20 list of countries (i.e. excluding China) (Figure 4.5 and Table 4.2).

Figure 4.5. EMI Emerging Markets Economic Growth and ESG (EMI D-ESG) Combined Ranking and Scores 2022 for E20 Group (Excluding China)



Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

As we analyze the impact of excluding China from our ranking, we notice that the maximum impact can be seen in the Economic Growth Pillar. The Average score across all countries in the Economic Growth improves by about 9% (from 4.42 to 4.80) (See Table 4.1 and Table 4.2). The Economic Growth pillar scores have improved for 13 countries when China is excluded from the list. We further analyze this in the section below (see section 3.1).

Table 4.2. E20 EMI D-ESG Combined Ranking and Scores by Pillar, 2022 (excluding China)

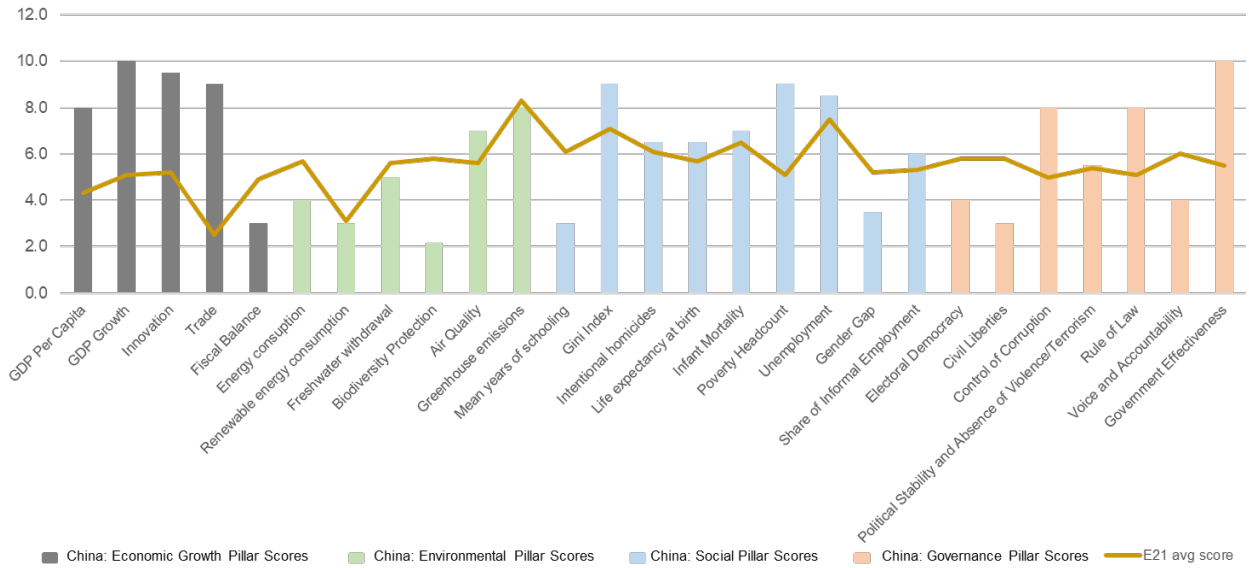
E20 Group	Economic Growth Score	Environmental Score	Social Score	Governance Score	D-ESG Combined Score
Vietnam	7.30	6.18	6.60	6.30	6.64
Romania	5.50	5.97	7.20	8.00	6.59
Malaysia	5.60	4.66	7.00	7.70	6.20
Chile	5.30	6.22	6.75	6.65	6.17
Philippines	6.40	6.83	6.15	4.90	6.09
Indonesia	5.00	5.65	6.50	7.05	5.98
Thailand	5.40	5.94	6.95	5.45	5.90
India	6.10	5.13	5.65	5.85	5.71
Russia	5.60	4.97	7.35	4.20	5.53
Mexico	5.20	6.85	5.90	4.10	5.49
Colombia	3.80	7.20	5.25	5.70	5.38
Argentina	2.90	5.89	6.50	6.45	5.27
Turkiye	6.40	5.35	6.50	2.45	5.26
Saudi Arabia	4.00	4.98	5.75	6.60	5.24
Bangladesh	4.90	5.19	5.55	4.20	4.96
South Africa	3.30	5.45	4.95	6.40	4.91
Brazil	3.20	6.41	5.85	4.30	4.82
Egypt	3.70	5.54	6.15	4.15	4.81
Pakistan	4.10	5.29	4.30	5.40	4.73
Nigeria	2.30	5.71	4.85	4.85	4.29
Average E20 Combined D-ESG Score	4.80	5.77	6.09	5.54	5.50

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

4.3.1. Key findings from the EMI D-ESG ranking

China, an Outlier in Economic Growth. As mentioned above, when comparing China's D-ESG average scores with the E20+1's, across all 27 indicators (Figure 4.6), it is remarkable how China is an outlier in the Economic Growth Pillar variables (in grey). Indeed, China's effect is such that when we remove China from the E20+1 group and recalculate the Economic Growth scores, the results change drastically. For instance, India jumps up eight places in the D pillar (Economic Growth) (from 12th position to 5th position) and Russia jumps up three places (from 7th position to 4th position), while Bangladesh goes down four places (from 6th position to 10th position).

Figure 4.6. Comparing EMI D-ESG scores for China (bars with different colors for each pillar) with average E20+1 scores (line)

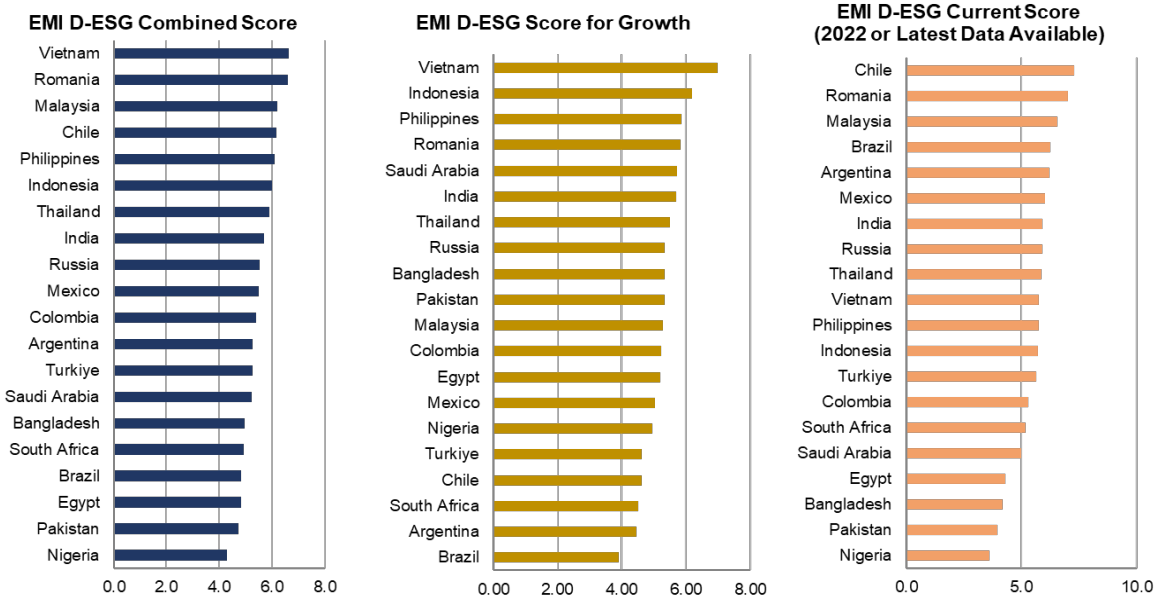


Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Deconstructing the E20 D-ESG Combined Scores into Growth scores and Current standing scores

We now analyze the impact of the growth as well as current standing scores on the overall ranking for the E20 list, i.e. excluding China. The top five countries for the combined scores are Vietnam, Romania, Malaysia, Chile, and the Philippines. While South Africa, Brazil, Egypt, Pakistan and Nigeria are in the bottom five (see Figure 4.7). It is interesting to note that Vietnam, Indonesia and the Philippines lead the list of countries (also in Growth) in the last 10 years, while also doing well in the combined scores; however, all three countries lag in the current score. If we consider only their performance based on the current situation, Chile, Romania, Malaysia and Brazil are in the top positions. It should be noted that even though Brazil's current scenario is very good, it has not grown over the past decade - which explains why Brazil's ranking is low in the combined score ranking

Figure 4.7. EMI D-ESG Combined Scores; EMI D-ESG Score for Growth; EMI D-ESG Current Score for E20 countries (excluding China)



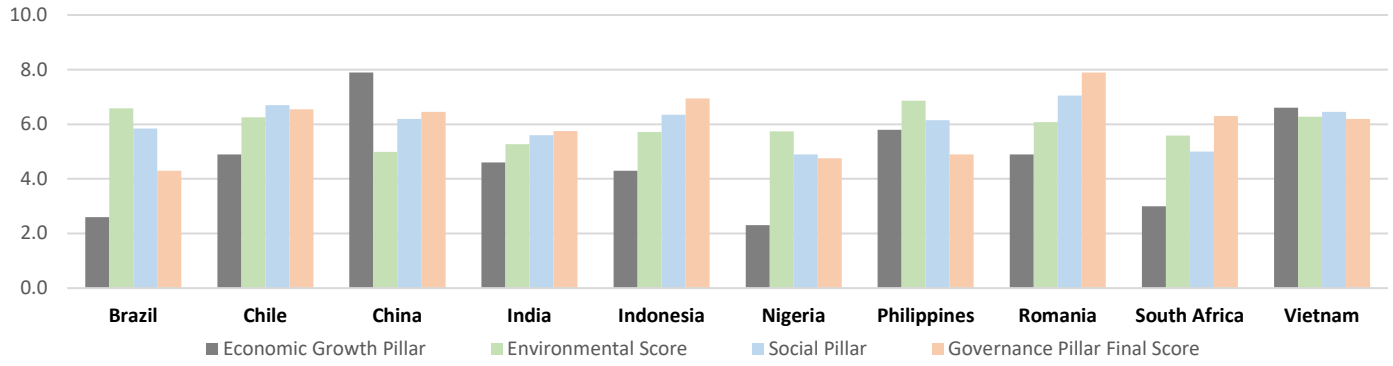
Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Key countries to be highlighted

- **Vietnam is one of the fastest-growing countries, a close second to China in the E20+1 D-ESG Ranking** on the backdrop of better Environmental and Social scores while also showing tremendous growth in traditional economic factors.

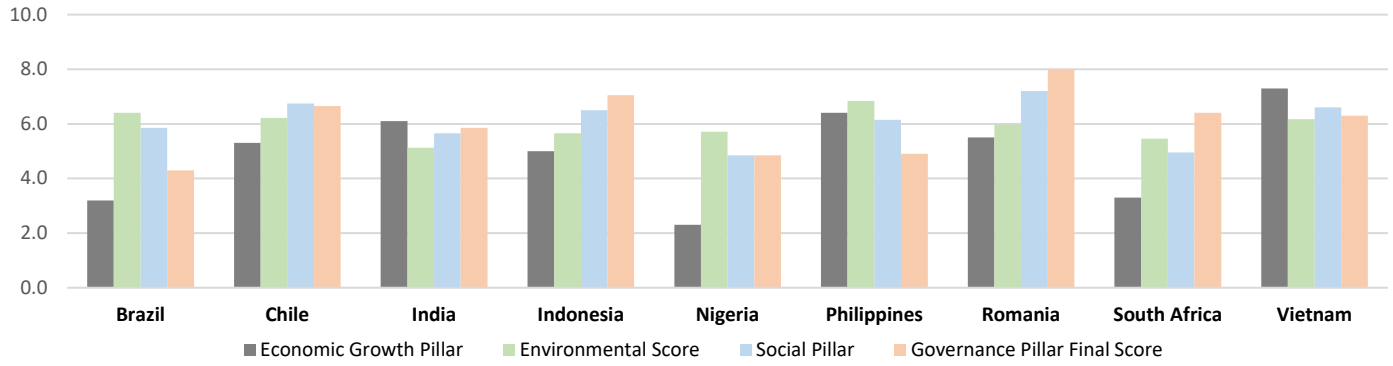
- We recently added **Romania** to the E20+1 list (Chapter 3). Even though it lags in Economic Growth, the same gets compensated by the outperformance in ESG, partly because of the ESG sustainability standards enforced by the European Commission.
- **Malaysia** does consistently well in Economic Growth, Social and Governance but lags in the Environmental Pillar
- Like Romania, **Chile's** scores are higher in the Environmental, Social, and Governance pillars compared to its performance in the Economic Growth Pillar
- **The Philippines** is one of the fastest-growing economies, but it lags in ESG.
- **Indonesia** is one of the fastest-growing countries (see Figure 4.7). Alongside Economic Growth, the country has shown tremendous growth in the Social as well as Governance pillars
- **India** lags due to its lower achievement in the Environmental and Social pillar. It also suffers from the outlier effect of China in economic growth. As mentioned above India's ranking improves drastically if we exclude China.
- **South Africa** and **Nigeria** do better in ESG than in economic growth.

Figure 4.8. EMI D-ESG Combined Scores for key countries in the E20+1 list (including China)



Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Figure 4.9. EMI D-ESG Combined Scores for key countries in the E20 list (excluding China)



Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

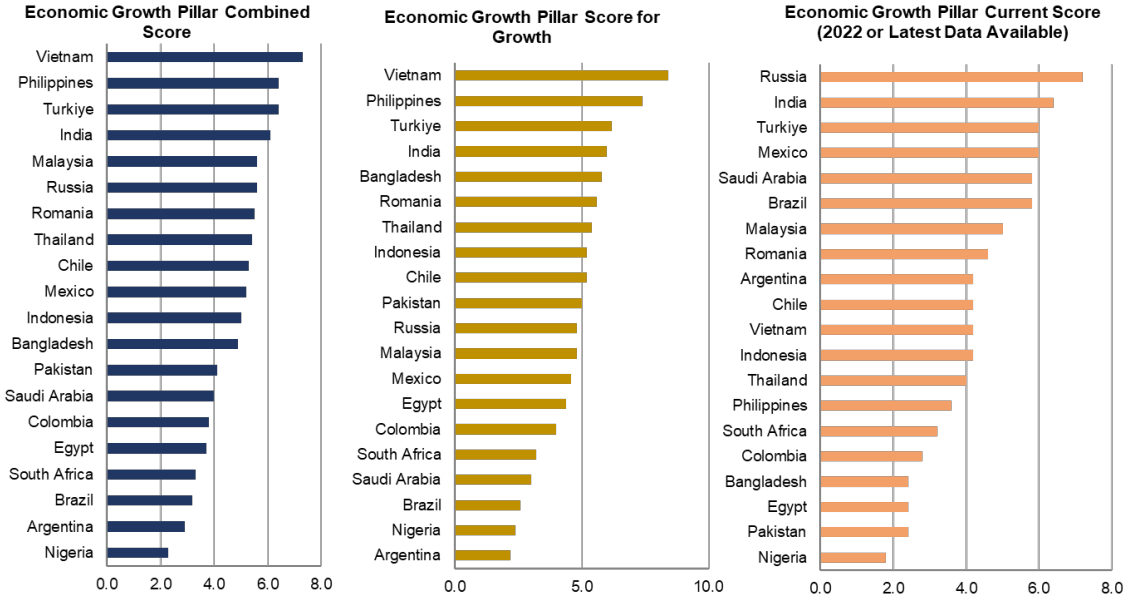
4.4. Reviewing the Pillars in the EMI D-ESG Rankings for E20 (excluding China)

In this section, we deconstruct the EMI D-ESG Ranking by separating out the "Progress/Growth" and "Current Situation" scores for each of the four pillars through charts (Figure 4.10).

4.4.1. E20 Economic Growth (D) score

Vietnam is the fastest-growing country in the E20 list (excluding China) in Economic Growth followed by the Philippines. However, based on the current situation Russia and India lead the pillar.

Figure 4.10. E20 (without China) Economic Growth (D) Pillar Combined Score: Growth (2011-2021) and Current Score

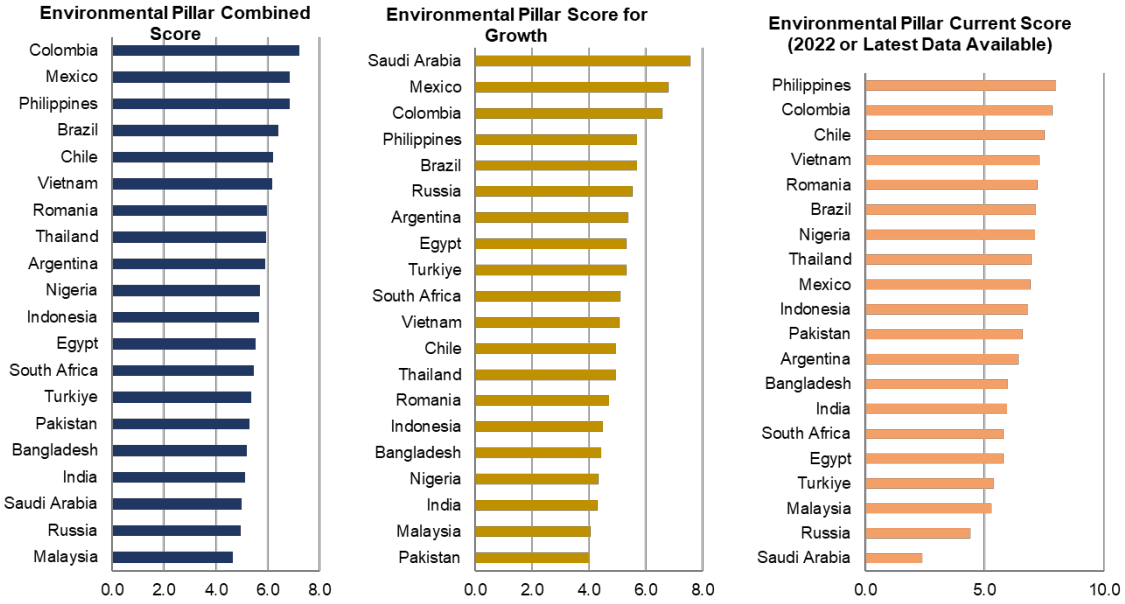


Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

4.4.2. E20 Environmental Pillar (E) score

Colombia, Mexico, and the Philippines lead in the combined scores for the environmental pillar. While Colombia does well in growth as well as Current Scores, Mexico's second position can be attributed to its growth as its current score is not very impressive. Saudi Arabia has shown the highest growth and the Philippines is in a better current situation than the other countries on the E20 list.

Figure 4.11. E20 (without China) Environmental Pillar: Combined Score, Growth (2011-2021) and Current Score

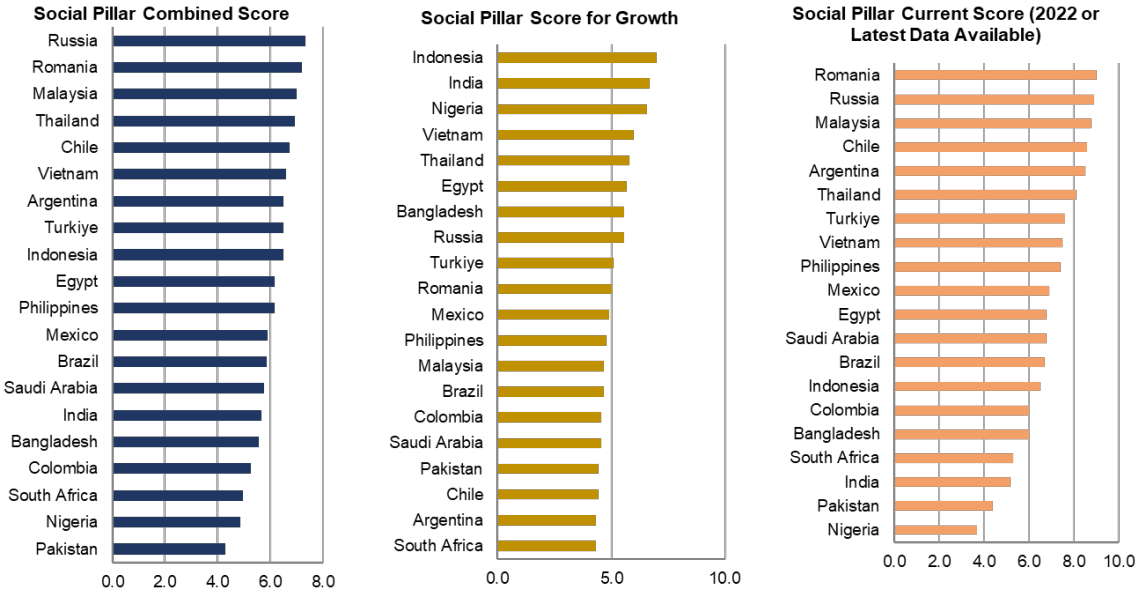


Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

4.4.3. E20 Social Pillar (S) score

Indonesia, India, and Nigeria have shown the highest growth in the social pillar. However, the current scores for Romania, Russia and Malaysia help these three countries secure the top 3 positions in the combined scores as well. These countries are not growing in the social pillar but have an advantage because of their strong current situation compared to the other countries in the group.

Figure 4.12. E20 (without China) Social Pillar: Combined Score, Growth (2011-2021) and Current Score

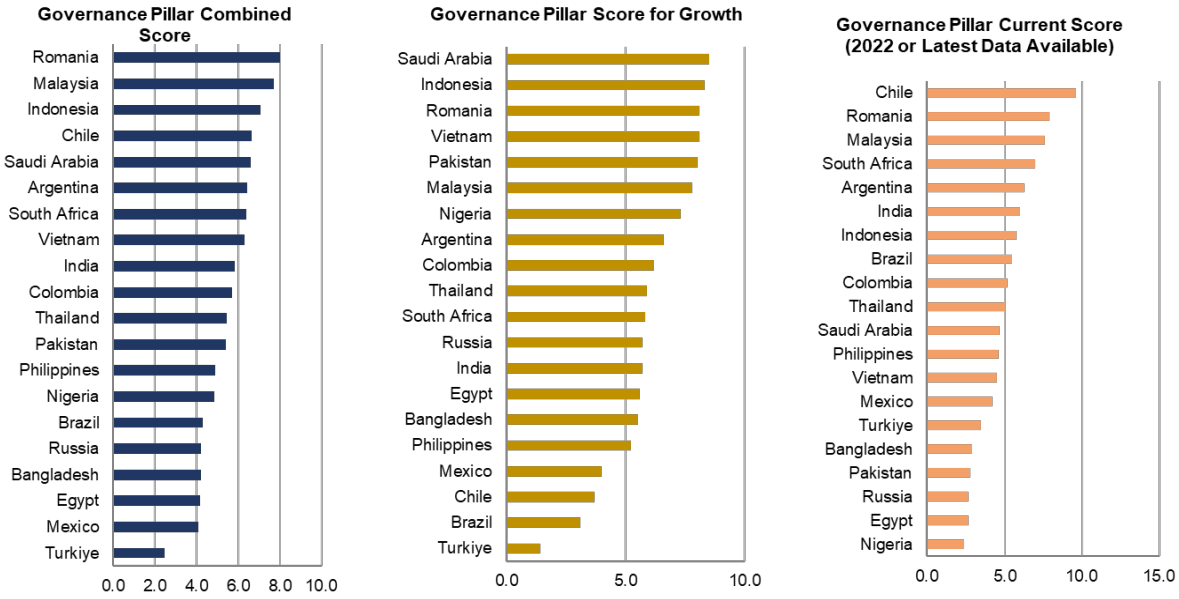


Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

4.4.4. E20 Governance Pillar (G) score

Romania does well in the Governance pillar, and fares well in both growth as well as current scores. While Saudi Arabia is the fastest growing country in this category, Chile and Romania show a strong current score.

Figure 4.13. E20 (without China) Governance Pillar: Combined Score, Growth (2011-2021) and Current Score.



Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

4.5. Description of methodology

4.5.1 Variable selection criteria, rated score calculation, weights

As mentioned above, diverse variables were selected to measure a country's performance in each pillar (see Figure 4.2). The data for each variable are from the World Bank, the SDG reports from the United Nations, the World Economic Forum, the World Data from the University of Oxford among other recognized organizations **(see 5.1).** The criteria for selecting the variables were as follows:

1. The data is important and meaningful for Emerging Markets
2. Availability from reliable sources (World Bank, IMF, UN SDGs, World Data from Oxford University…)
3. Availability of recent data for most countries

4. Comparison with other similar rankings
5. Important for the subject covering the Pillar
6. Avoid duplication and overlap
7. Transparency and simplicity

A Rated Score for each variable is calculated for all countries, based on their performance compared to peers. The methodology to give a **rated score** is as follows: for each variable, the range of the values across all E20+1 countries is used to divide the countries into ten groups. To do so, we take the Highest & Lowest values across all 20+1 emerging countries and then divide this range into ten groups at equal intervals. A Score between 1 to 10 (**10** being the best) is allotted to every country depending on which group the country falls into, i.e., the country falling in the highest group gets a score of 10, and so on. Such a score is called a **Rated Score**[10].

Once we have a Rated Score for each variable in a Pillar, we apply Weights to these scores to arrive at a consolidated pillar score for all countries and, hence we get a total of 4 scores per country. The weight distribution for each variable was based on a thoughtful conversation to select the most relevant factors while maintaining integrity and transparency. As part of the process, the team studied weights from other recognized indexes and rankings, which include the Robeco Sustainability Ranking, and Yale University Environmental Performance Index (EPI)[11].

- For the Economic Growth Pillar, all variables get equal weights.
- For the Environmental Pillar, weights are aligned with the Environmental Performance Index (EPI) ranking[4] (see Table 4.3)
- For the Social Pillar, equal weights are given to all variables except for education, which is given double weight.
- For the Governance Pillar, equal weights are given to each sub-pillar and then split equally within the sub-pillar.

Table 4.3. Comparing EMI D-ESG Environmental Pillar Weights with Yale EPI Weights

Sub-Pillars	Comparable Sub-Categories from the Yale EPI Index	Corresponding weights	Pro-Rata allocation	EPI Sub Pillar Weights	D-ESG Sub Pillar Weights
Climate Change	Climate Change Mitigation	38%	54%	54%	50%
Ecosystem Vitality	Biodiversity & Habitat	18%	26%	30%	30%
	Water Resources	3%	4%		
Environmental Health	Air Quality	11%	16%	16%	20%
		70%	**100%**	**100%**	**100%**

Source: Authors and EMI research team based on Yale University's EPI ranking

The weights for each variable are provided in Table 4.4.

[10] Another method could have been to use percentiles to create the groups, in which case countries falling above the 90th percentile would get a score of 10, countries falling between the 80th percentile to 90th percentile would get a score of 9, and so on. Even though percentile is a more generally accepted method for ranking variables, the results for Environmental, Social, and Governance Pillars are not very different regardless of the method used, except for a few outliers. However, for the Economic Growth pillar, where we try to rank the "traditional economic" variables, we see major differences. The percentile method forced the country to be split into equal groups despite significant gaps in their numbers. Hence, the percentile method, to some extent, blurs the true picture and could affect our analysis. Hence, we decided to move ahead with the Range method.

[11] The input from experts Antoni Estevadeordal, Rafael Escalona Reynoso, Gautam Jain, the FII's team for Inclusive ESG for Emerging Markets, Economist Intelligence Unit's ESG Rating team, EMI Advisory Council, EMI Advisory Board was taken into consideration.

[4] Yale University EPI framework has three pillars: Climate Change (38%), Ecosystem Vitality (42%), and Environmental Health (20%). These Pillars are further divided into 11 sub-categories. Only four sub-categories (accounting for 70% of the total weights) are comparable with the D-ESG sub-pillars and variables, namely Climate Change Mitigation (38%), Biodiversity & Habitat (18%), Water Resources (3%) and Air Quality (11%). We analyze them further by taking pro-rata weight allocation, which comes to 54% (climate change), 30% (ecosystem vitality), 16% (environmental health), which we round up to 50:30:20 in our framework (see Table 4.3).

Table 4.4. Weights of the 27 variables in the D-ESG ranking: pillars and sub-pillars

Economic Growth Pillar	Environmental Pillar
Gross Domestic Product (GDP) - 40% - GDP per capita - 20% - GDP growth - 20% **Trade - 20%** - Share of world Imports and Exports - 20% **Innovation - 20%** - Knowledge and Technology Outputs - 20% **Fiscal Balance – 20%** - Fiscal Balance as a % of GDP - 20%	**Climate Change - 50%** - Energy consumption per capita - 15% - Renewable Energy consumption - 15% - Greenhouse emissions (CO2, CH4, N2O, F-Gas) – 20% **Ecosystem Vitality – 30%** - Biodiversity Protection (marine/terrestrial/freshwater)- 20% - Freshwater withdrawal – 10% **Environmental Health - 20%** - Air Quality (particulate matter pollution/ozone pollution)- 20%
Social Pillar	**Governance Pillar**
Health - 20% - Life expectancy at birth- 10% - Infant mortality rate - 10% **Education - 20%** - Mean years of schooling - 20% **Poverty - 50%** - Poverty headcount ratio - 10% - Gender gap - 10% - Gini index - 10% - Unemployment (% of total labor force) - 10% - Share of Informal Employment in Total Employment – 10% **Social Unrest - 10%** - Intentional Homicides - 10%	**Corruption and Stability- 20%** - Control of Corruption - 10% - Political Stability and Absence of Violence- 10% **Law & Justice - 20%** - Rule of Law - 20% **Accountability - 20%** - Voice and Accountability - 20% **Government Effectiveness - 20%** - Government Effectiveness - 20% **Democracy and Freedom – 20%** - Civil Liberties Score from Freedom House - 10% - Electoral Democracy Index - 10%

Source: Authors and EMI research team

The ESG initiatives within an Emerging Economy will depend mainly on the country's economic conditions. Hence, comparatively, D (Economic Growth Pillar) is weighted higher than the E, S, and G Pillars with the ratio 30 versus 70. Final weights are then applied to each pillar's score to get the Final D-ESG Score of a country, as shown in Table 4.5.

Table 4.5. Final Weights

Pillars	Final Weights	
Economic Growth	30%	30%
Environmental Pillar	70%	23.333%
Social Pillar		23.333%
Governance Pillar		23.333%

Source: Authors and EMI research team

The Final Emerging Markets Country Ranking is based on this Final EMI D-ESG Country Score.

4.5.2 Additional considerations on the D-ESG variables

As mentioned before, we follow the standard calculation for all variables, i.e., the Average Score of the growth/progress score and the current year (or most recent year) score. However, due to unavailability of data, we sometimes had to deviate from the standard framework and such exceptions are explained below.

Table 4.6. Economic growth pillar (D) at a glance

D - Economic Growth					
Classification	Variable	Description	Pillar Weights	Source	Latest Year the data is available for
GDP per capita	GDP per capita (constant 2015 US$) from 2011 to 2021	Avg of 2021 Score and Score for Growth from 2011 to 2021	0.20	World Bank	2021
GDP growth	% Change in GDP (constant 2015 US$) from 2011 to 2021	Score for Growth from 2011 to 2021	0.20	World Bank	2021
Innovation	Knowledge and technology outputs (GII) Score from 2013 to 2022	Avg of 2022 Score and Score for Growth from 2013 to 2022	0.20	WIPO	2022
Trade	Share of World Imports and Exports 2011 to 2021*	Avg of 2020 Score and Score for Growth from 2011 to 2021	0.20	World Bank: Export	2021
				World Bank: Import	2021
Fiscal Balance	5-year Avg of Fiscal balance, % of GDP from 2017 to 2021	Score for 5-year Simple Avg (2017 to 2021)	0.20	WIPO	2021

* NOTE: [Country's Share of World Exports and Imports = (Country's Export + Country's Import) / Total World Exports and Imports]
Source: Authors and EMI research team

- **GDP Growth:** In the D-ESG Score, we take the score for percentage change in GDP from 2011 to 2021 for the following reason. When we calculate the Score for GDP for 2021, the results are highly skewed because of China's high GDP compared to the other Emerging countries to the extent that the E20 (all except for China) get a score of 1 or 2 with China at a 10 - which does not add much value to the analysis. We hence only consider growth scores and not the average of growth and current scores. However, while calculating the Current Scores, we take the score for 2021.
- **Share of World Imports and Exports:** To calculate a country's "Share of World Imports and Exports" we use the formula: Country's Share of World Exports and Imports = (Country's Export + Country's Import) / Sum of World Exports and World Imports. Both datasets are in constant 2015 prices, expressed in U.S. dollars, and taken from World Bank Data. Data for China is only available for 2015. Hence the score for China is based only on China's Share of World Exports & Imports for 2015. However, it still falls in the highest scoring group and is scored 10, so there is no impact on the Scores and Rankings.
- **Fiscal Balance, as a percentage of GDP:** We consider a five-year simple average value Fiscal Balance, percentage of GDP from 2017 to 2021 to arrive at a Score for Fiscal Balance, instead of only taking 2021 because the current fiscal position of a country may not give a real picture of this fiscal situation given the pandemic and the varying degree of stimulus provided. Further, a 10-year growth also may not be relevant given the nature of the variable. Hence a 5-year average, though not consistent with the standard ranking **framework**, seemed to be a more accurate representation of the scenario for this variable. We follow a similar approach as for the Growth Score.

Table 4.7. Environmental pillar at a glance

E - Environment					
Classification	Variable	Description	Pillar Weights	Source	Latest Year the data is available for
Energy	Renewable energy consumption (% of total final energy consumption) 2011 to 2019	Avg of 2019 Score and Score for Change from 2011 to 2019	0.15	World Bank	2019
Efficiency	Consumption of energy per person (MMBtu/person) 2011 to 2019	Avg of 2019 Score and Score for Change from 2011 to 2019	0.15	EIA - Resourcewatch.org	2019
Green House Emissions	Greenhouse Emissions 2011 to 2019	Avg of 2019 Score and Score for Change from 2011 to 2019	0.20	Climatewatch	2019
Air Quality	Mean Ambient particulate matter pollution 2011 to 2019 | Weights: 1/2	Avg of 2019 Score and Score for Change from 2011 to 2019	0.20	State of Global Air	2019
	Mean Ambient ozone pollution Values 2011 to 2019 | Weights: 1/2	Avg of 2019 Score and Score for Change from 2011 to 2019		State of Global Air	2019
Biodiversity Protection	Mean area that is protected in marine sites important to biodiversity 2017 to 2022 | Weights: 1/3	Avg of Score for growth from 2017 to 2022 and score for 2022	0.20	Sustainable Development Report 2021	2022
	Mean area that is protected in terrestrial sites important to biodiversity 2017 to 2022 | Weights: 1/3	Avg of Score for growth from 2017 to 2022 and score for 2022		Sustainable Development Report 2021	2022
	Mean area that is protected in freshwater sites important to biodiversity 2017 to 2022 | Weights: 1/3	Avg of Score for growth from 2017 to 2022 and score for 2022		Sustainable Development Report 2021	2022
Freshwater Withdrawal	Annual freshwater withdrawals, domestic (% of total freshwater withdrawal)	Avg of Score for growth from 2012 to 2018 and score for 2018	0.10	World Bank	2018

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

- **The Mean area that is protected in marine sites is important to biodiversity:** Data is unavailable for two countries, and alternative sources are used to fill the data gap for Bangladesh (European Commission) and Nigeria (Biopama.org).

Table 4.8. Social pillar at a glance

S - Social					
Classification	Variable	Description	Pillar Weights	Source	Latest Year the data is available for
Income distribution	Most Recent Gini index (World Bank estimate)	Avg of Score for growth and Score for the most recent year data	0.10	World Bank	Ranges from 2014 to 2021
Poverty	Poverty headcount ratio at $6.85 a day (2017 PPP) (% of population)	Avg of Score for growth and Score for the most recent year data	0.10	World Bank	Ranges from 2015 to 2021
Crime rate	Intentional Homicides # per 100000 from 2011 to 2020	Avg of Score for growth and Score for the most recent year data	0.10	World Bank	2018/19/20
Unemployment	Unemployment, total (% of total labor force) (modeled ILO estimate) for 2011 to 2021	Avg of Score for growth from 2011 to 2021 and Score for 2021	0.10	World Bank	2021
Gender equality	Global Gender Gap Score for 2010 to 2022	Avg of Score for growth from 2010 to 2022 and Score for 2022	0.10	World Economic Forum	2022
Informal Economy	Share of Informal Employment in Total Employment for 2018/2021	Score for data for 2018	0.10	International Labor Organization	2018/2021
Life expectancy at birth	Life expectancy at birth, total (years) from 2011 to 2020	Avg of Score for growth from 2011 to 2020 and Score for 2020	0.10	World Bank	2020
Infant mortality rate	Mortality rate, infant (per 1,000 live births) from 2011 to 2020	Avg of Score for growth from 2011 to 2020 and Score for 2020	0.10	World Bank	2020
Education	Mean years of schooling (years) 2011 to 2021	Avg of Score for growth from 2011 to 2021 and Score for 2021	0.20	UNDP	2021

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

- **Most Recent Gini index according to World Bank estimates:** Data is not available for all the countries from 2011 to 2021. The base year varies from 2010 to 2012, and the most recent year for which data is available ranges from 2014 to 2021. Further, because the data is old (listed in Appendix I), we could not measure the evolution over the years for Malaysia, Saudi Arabia, and South Africa, in which case we based our results only on the current standing scores instead of average scores for these countries. Lastly, we use an alternative source to assess Bangladesh (Bangladesh GINI index, 2017-2021 - knoema.com).
- **Poverty headcount ratio at USD 6.85 per day (2017 Purchasing Power Parity, PPP) as a percentage of the population):** Data is not available for all the countries for the years from 2011 to 2022. The base year varies from 2010 to 2012, and the most recent year for which data is available ranges from 2014 to 2021. Further, because the data is old (listed in Appendix I), we were unable to measure growth for Bangladesh, Malaysia, Saudi Arabia, and South Africa, in which case we based our results only on the current standing scores instead of average scores for these countries.
- **Share of Informal Employment in Total Employment**: We consider the score for the share of informal employment in total employment for 2018. For the same reason, this variable is not included in the Growth Scores. However, data is not available for all the countries. Hence, we use an alternative source to assess Malaysia (Khazanah Research Institute), the Philippines (ILO), Saudi Arabia (Arab NGO Network for Development), Thailand (National Statistical Office), and Canada (ILO).
- **Intentional Homicides number per 100000**: Data is not available for all the countries for all the years in the World Bank dataset. Hence we use World Health Organization (WHO) for Egypt, Thailand, Malaysia, Indonesia, and Vietnam.

Table 4.9. Governance pillar at a glance

G - Governance					
Classification	Variable	Description	Pillar Weights	Source	Latest Year, the data is available for
Corruption	Control of Corruption: Estimate 2011 to 2020	Avg of 2021 Score and Change in Score from 2011 to 2021	0.10	World Bank	2021
Stability	Political Stability and Absence of Violence/Terrorism: Estimate 2011 to 2020	Avg of 2021 Score and Change in Score from 2011 to 2021	0.10	World Bank	2021
Rule of Law	Rule of Law: Estimate 2011 to 2020	Avg of 2021 Score and Change in Score from 2011 to 2021	0.20	World Bank	2021
Voice and Accountability	Voice and Accountability: Estimate 2011 to 2020	Avg of 2021 Score and Change in Score from 2011 to 2021	0.20	World Bank	2021
Government Effectiveness	Government Effectiveness: Estimate 2011 to 2020	Avg of 2021 Score and Change in Score from 2011 to 2021	0.20	World Bank	2021
Democracy	Electoral Democracy Index 2011 to 2021	Avg of 2021 Score and Change in Score from 2011 to 2021	0.10	World Data at the University of Oxford	2021
Civil Liberties	Civil Liberties Score from Freedom House: 2013 to 2022	Avg of 2022 Score and % Change in Score from 2013 to 2022	0.10	Freedom House	2022

Note: There are no exceptions in the Governance Pillar.
Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Appendix I. Handling Missing Data

We do not penalize a country because of a lack of data; therefore, detailed research is done for every case where data is missing. The missing data is handled on a case-by-case basis, depending on the structure of the datasets. Below is a list of data points for which recent data was not found in the original source, and an alternate source was used to fill the gap.

Table 4.10. Filling the Data gaps with alternative sources[12]

Variable Name	Country Name	Year	Value	Source
Environmental Pillar				
Mean area that is protected in marine sites important to biodiversity (%)	Bangladesh	2022	20.80%	European Commission
	Nigeria	2022	0%	Biopama.org
Social Pillar				
Share of informal employment in total employment	Malaysia	2019	16.80%	Khazanah Research Institute
	Philippines	2020	53%	ILO
	Saudi Arabia	2017	50%	Arab NGO Network for Development
	Thailand	2021	52%	National Statistical Office
	Canada	2021	18%	ILO
Intentional homicides (per 100,000 people)	Egypt, Arab Rep.	2011	4.14	WHO
	Egypt, Arab Rep.	2019	4.15	WHO
	Indonesia	2011	4.83	WHO
	Indonesia	2019	4.29	WHO
	Malaysia	2011	2.75	WHO
	Malaysia	2019	2.72	WHO
	Thailand	2011	6.91	WHO
	Thailand	2019	4.26	WHO
	Vietnam	2011	1.83	WHO
	Vietnam	2019	1.85	WHO
Gini Index	Bangladesh	2018	39.5	Bangladesh GINI index, 2017-2021 - knoema.com

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Table 4.11. Data Older than 2017

Data Older than 2017			
Variable Name	**Country Name**	**Year**	**Source**
Gini Index	Malaysia	2015	World Bank
	South Africa	2014	World Bank
	Japan	2013	World Bank
Poverty Headcount Ratio	Bangladesh	2016	World Bank
	Malaysia	2015	World Bank
	South Africa	2014	World Bank
	Japan	2013	World Bank

[12] The values for Saudi Arabia Gini Index and Poverty level were not considered because of the lack of data from a reliable source and this is the only case as data was found for all the other variables of all E20+1 countries.

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Appendix II. G7 Group scores

G7 Group	D-ESG Combined Score
Germany	7.20
United Kingdom	6.89
Japan	6.61
France	6.49
Canada	6.31
Italy	6.31
United States	6.09

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Appendix III. Pillar Score Boards

Table 4.12. E20 (without China) Economic Growth Pillar Score Board

E20 Group	GDP Per Capita (2011-2021)	GDP Growth (2011-2021)	Knowledge and technology outputs (2013-2022)	Share of World Exports and Imports (2011-2021)	Fiscal balance (% of GDP) (5-Yr Avg: 2017-2021)	Economic Growth Pillar Final Score
Argentina	4.0	1.0	4.5	1.0	4.0	2.9
Bangladesh	5.5	10.0	2.0	2.0	5.0	4.9
Brazil	3.5	1.0	7.0	2.5	2.0	3.2
Chile	6.0	4.0	7.5	3.0	6.0	5.3
Colombia	3.5	4.0	5.0	1.5	5.0	3.8
Egypt	3.0	6.0	6.5	2.0	1.0	3.7
India	5.0	9.0	9.0	6.5	1.0	6.1
Indonesia	4.0	7.0	5.0	3.0	6.0	5.0
Malaysia	5.5	6.0	6.5	3.0	7.0	5.6
Mexico	3.5	2.0	8.0	5.5	7.0	5.2
Nigeria	1.5	4.0	1.0	1.0	4.0	2.3
Pakistan	3.0	6.0	6.5	2.0	3.0	4.1
Philippines	4.5	7.0	9.5	4.0	7.0	6.4
Romania	7.0	5.0	7.5	4.0	4.0	5.5
Russia	4.5	2.0	7.0	4.5	10.0	5.6
Saudi Arabia	6.0	3.0	6.0	2.0	3.0	4.0
South Africa	2.0	2.0	7.5	1.0	4.0	3.3
Thailand	4.0	4.0	9.0	3.0	7.0	5.4
Turkiye	7.0	8.0	7.0	4.0	6.0	6.4
Vietnam	5.5	9.0	6.5	7.5	8.0	7.3

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Table 4.13. E20 (without China) Environmental Pillar Score Board

E20 Group	Energy consumption per capita (2011-2019)	Renewable energy consumption (% of Total Energy) (2011-2019)	Freshwater withdrawal over total water withdrawal (2007-2018)	Biodiversity Protection (2017-2022)	Air Quality (2011-2019)	Greenhouse emissions (CO_2, CH_4, N_2O, F-Gas) (2011-2019)	Environmental Pillar Final Score
Argentina	5.0	2.5	5.5	5.8	6.8	8.5	5.9
Bangladesh	7.0	2.5	6.0	3.8	2.0	10.0	5.2
Brazil	6.0	4.5	4.0	6.7	7.0	8.5	6.4
Chile	5.0	3.0	7.0	6.3	6.3	9.0	6.2
Colombia	6.5	3.5	9.0	7.5	7.5	9.0	7.2
Egypt	7.0	1.5	4.5	5.3	4.3	9.5	5.5
India	6.0	3.5	6.5	4.5	1.3	9.5	5.1
Indonesia	6.0	2.0	5.5	5.5	5.5	8.5	5.7
Malaysia	4.0	4.5	4.5	4.2	6.0	4.5	4.7
Mexico	6.5	2.5	5.0	7.5	8.0	9.5	6.9
Nigeria	6.5	6.0	2.0	6.2	2.0	10.0	5.7
Pakistan	6.5	4.0	7.0	3.8	1.8	9.5	5.3
Philippines	6.0	3.0	5.5	6.2	9.0	9.5	6.8
Romania	6.0	3.0	5.5	7.8	7.5	5.0	6.0
Russia	2.5	1.5	2.5	4.8	9.3	6.5	5.0
Saudi Arabia	5.5	5.5	4.5	5.7	3.3	5.5	5.0
South Africa	6.0	2.0	7.0	4.5	5.3	8.0	5.5
Thailand	4.5	3.0	7.0	6.8	5.3	8.5	5.9
Turkiye	4.5	2.5	6.5	4.0	5.8	8.5	5.4
Vietnam	5.5	2.0	7.0	5.5	7.8	8.5	6.2

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Table 4.14. E20 (without China) Social Pillar Score Board

E20 Group	Mean years of schooling (2011-2021)	Gini Index (Period Varies) (2011-2020)	Intentional homicides (2011-2020)	Life expectancy at birth (2011-2020)	Infant Mortality rate (2011-2020)	Poverty Headcount Ratio (2011-2020)	Unemployment (2011-2021)	Gender Gap (2010-2022)	Share of Informal Employment in Total Employment 2018/21	Social Pillar Final Score
Argentina	7.0	7.5	6.5	6.0	7.0	5.0	6.5	6.5	6.0	6.5
Bangladesh	7.0	4.5	6.5	6.5	8.5	1.0	8.0	5.5	1.0	5.6
Brazil	4.5	7.5	5.0	6.5	6.0	7.5	4.0	5.0	8.0	5.9
Chile	6.0	7.0	6.0	6.0	6.0	8.5	7.5	5.5	9.0	6.8
Colombia	5.5	5.0	7.0	6.0	6.0	3.5	5.5	4.5	4.0	5.3
Egypt	8.5	7.0	6.0	5.0	7.0	2.5	9.0	4.0	4.0	6.2
India	6.5	8.5	7.0	5.5	8.5	2.5	8.5	2.0	1.0	5.7
Indonesia	7.0	9.0	6.5	5.5	6.5	6.5	9.5	5.5	2.0	6.5
Malaysia	6.0	7.0	6.5	6.0	5.5	10.0	8.5	4.5	10.0	7.0
Mexico	4.5	8.0	1.5	4.5	6.0	5.5	9.5	10.0	5.0	5.9
Nigeria	6.5	8.5	7.0	4.5	4.0	1.5	5.5	3.5	1.0	4.9
Pakistan	1.0	9.0	7.5	4.5	6.5	2.5	7.5	1.5	2.0	4.3
Philippines	4.0	8.5	7.5	5.0	5.5	5.5	9.5	6.0	6.0	6.2
Romania	6.0	9.0	6.5	4.5	7.0	10.0	9.5	4.5	9.0	7.2
Russia	8.5	9.5	7.5	5.0	6.5	6.5	9.5	4.0	8.0	7.4
Saudi Arabia	9.0	1.0	6.5	5.5	6.5	1.0	8.0	5.0	6.0	5.8
South Africa	8.0	1.0	1.0	7.0	6.0	4.0	1.0	6.5	7.0	5.0
Thailand	6.5	9.5	7.0	7.0	6.5	7.0	9.0	4.5	6.0	7.0
Turkiye	6.0	6.5	7.0	7.5	7.5	6.5	5.5	4.5	8.0	6.5
Vietnam	7.5	8.5	6.5	5.0	5.5	9.0	8.5	5.0	3.0	6.6

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Table 4.15. E20 (without China) Governance Pillar Score Board

E20 Group	Electoral Democracy Index (2011-2021)	Civil Liberties (2013-2022)	Control of Corruption (2011-2021)	Political Stability and Absence of Violence/Terrorism (2011-2021)	Rule of Law (2011-2021)	Voice and Accountability (2011-2021)	Government Effectiveness (2011-2021)	Governance Pillar Final Score
Argentina	9.5	9.0	4.5	5.5	5.0	9.5	3.5	6.5
Bangladesh	4.0	4.5	4.0	5.5	4.5	3.5	4.0	4.2
Brazil	5.0	7.5	2.0	4.5	3.0	6.5	2.5	4.3
Chile	8.0	9.5	6.0	5.0	6.0	8.0	5.0	6.7
Colombia	7.5	8.0	4.5	5.0	3.0	8.0	5.0	5.7
Egypt	5.0	1.5	3.5	5.5	6.5	2.5	4.0	4.2
India	3.5	6.0	6.0	7.0	5.5	5.5	7.0	5.9
Indonesia	6.0	5.5	6.0	6.0	7.0	8.0	8.5	7.1
Malaysia	7.5	7.5	7.0	7.0	8.5	8.0	7.5	7.7
Mexico	7.5	6.5	1.0	5.0	2.0	6.0	2.5	4.1
Nigeria	7.0	5.5	4.0	3.0	5.5	6.0	3.0	4.9
Pakistan	5.0	6.5	5.0	5.5	5.5	5.0	5.5	5.4
Philippines	5.0	5.5	5.0	5.5	3.0	6.0	5.0	4.9
Romania	10.0	9.0	7.0	8.0	8.5	9.5	5.0	8.0
Russia	4.5	3.0	4.0	5.5	2.5	3.5	6.5	4.2
Saudi Arabia	4.5	4.0	8.5	5.0	7.5	5.5	9.0	6.6
South Africa	7.5	8.5	6.0	3.0	6.0	9.5	4.0	6.4
Thailand	2.0	4.5	4.0	7.0	8.0	4.0	6.5	5.5
Turkiye	2.5	1.5	3.0	3.5	2.0	2.0	3.0	2.5
Vietnam	5.5	5.0	6.0	5.5	7.5	5.5	7.5	6.3

Source: Authors and EMI research team based on data (see appendix V) accessed by December 2022

Appendix IV. Reasons why Variables were Not Selected

Table 4.16. Variables Not Selected in the process

Variables Not Selected	Data Source	Reason for Not Selecting
Economic Growth Pillar		
Human Development Index	United Nations	To avoid composite indicators and duplication
Global Innovation Index Score from 2013 to 2021	WIPO	To avoid composite indicators and duplication; replaced with the knowledge and technological output scores
Environmental Pillar		
Forest area (% of land area)	World Bank	Biased. Depends on geography
Sustainable Tech R&D	OECD	Lack of data
Protected ocean area (%)	OECD	Lack of data
Fishing Quotas	Not Applicable	Lack of data
Total greenhouse gas emissions (kt of CO2) equivalent)	World Bank	Not selected because it is included in the greenhouse emissions from Climate watch
Carbon Neutral Commitment: Net Zero Target Year	COP 26	Concerns around accuracy of data. Lack of consistency in reporting/measuring across all countries
Combustible Renewables and Waste (% of total energy) from 2004 to 2014	World Bank	Old variable - Latest data from 2014
GDP per unit of energy use (constant 2017 PPP $ per kg of oil equivalent) (2004 to 2014)	World Bank	Old variable 2014 - Latest data from 2014
Projected GHG Emission 2050	World Bank	The variable is not real, so a country can change the results. For instance it is not fair to rank the countries for things they have not done in the past.
Social Pillar		

Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)	World Bank	We replaced by - Poverty headcount ratio at $6.85 a day (2011 PPP) (% of population, World Bank)
Literacy (%)	World Bank	Broad definition of Literacy, we instead focus on education by adding Mean Years of Schooling
Prevalence of undernourishment (% of population)	World Bank	We already have infant mortality and life expectancy
School enrollment, primary (% gross)	World Bank	Replaced all 3 variables linked to education with "Mean Years of Schooling"
School enrollment, secondary (% gross)	World Bank	Replaced all 3 variables linked to education with "Mean Years of Schooling"
School enrollment, tertiary (% gross)	World Bank	Replaced all 3 variables linked to education with "Mean Years of Schooling"
Informal employment (% of total employment; International Labor Organization; harmonized series)	Center For Economic Policy Research	Data missing for G7 and China, Iran, Malaysia, Nigeria, Philippines, Russia, Saudi Arabia, Turkey
Vulnerable employment, total (% of total employment) (modeled ILO estimate)	World Bank	Not selected Replaced by informal employment
Women in boards of directors and executives	OECD	Not enough data
Governance Pillar		
World Bank Ease of Doing Business Ranking	World Bank	It is a compound ranking
Regulatory Quality: Estimate	World Bank	Concerns around accuracy of data
Ranking of Countries by Quality of Democracy: Total Value Index 2020 (Context Measurement)	Democracy Matrix by German Research Foundation (DFG)	The results between Democracy Index and Electoral Democracy are very similar, we decided to include Electoral Democracy instead of Democracy Index, given the growing popularity and trust for the World Data at the University of Oxford.
SDG 16: Peace, Justice and Strong Institutions 2011 to 2021	Sustainable Development Report 2021	Because it is a composite indicator on its own and has multiple overlaps with our list of variables. Further, there are concerns regarding the reliability of the scores.

Source: Authors and EMI research team

Appendix V. All Data Sources

World Bank
World Bank
WIPO
World Bank: Export
World Bank: Import
WIPO
World Bank
EIA - Resourcewatch.org
Climatewatch
Climatewatch
State of Global Air
State of Global Air
Sustainable Development Report 2021
Sustainable Development Report 2021
Sustainable Development Report 2021
World Bank
World Bank
World Bank
World Bank
World Bank
World Economic Forum
International Labour Organisation
World Bank
World Bank
UNDP
World Bank
World Bank
World Bank
World Bank
World Bank
World Data at the University of Oxford
Freedom House
Welcome | Environmental Performance Index (yale.edu)
Khazanah Research Institute
ILO
Arab NGO Network for Development
National Statistical Office
ILO
WHO
Bangladesh GINI index, 2017-2021 - knoema.com
Saudi Arabia's Inequality Levels | 2021 | Economic Data | World Economics
Aljazeera
European Commission
Biopama.org

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Chapter 5

A PRIVATE SECTOR PERSPECTIVE ON ESG INVESTMENT FOR DEVELOPMENT IN EMERGING MARKETS[13]

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Executive Summary

The current economic turbulence in emerging markets, caused by multiple factors including the repercussions of Russia's war in Ukraine, a divergent post-Covid-19 recovery process, global supply chain bottlenecks and inflationary pressures risk slowing down the development of sustainable finance in emerging markets. Nevertheless, the opportunity, as a new source of capital that contributes to achieving the Sustainable Development Goals, remains a significant one. This chapter gives a private sector perspective on ESG investment in emerging markets and points to policies that could maximise the impact of sustainable finance on inclusive growth and green transition. The analysis is based on the work of the OECD Emerging Markets Network (EMnet), the OECD's business-led platform for dialogue and analysis on emerging markets.

Keywords: Global supply chains, Sustainable Development Goals, sustainable finance, sustainability, emerging markets.

5.1. Turbulent times for ESG investment in emerging markets

The war in Ukraine has negatively impacted an already volatile and fragile economic recovery, particularly in emerging markets. Global growth is projected to slow from 3% in 2022 to 2.2 per cent in 2023, well below the pace foreseen prior to the war. In 2023, GDP could be around USD 2.8 trillion lower than expected a year ago (a shortfall of just over 2% in PPP terms). Significant uncertainty surrounds the projections. Soaring commodity prices and supply chain disruptions are exacerbating the affordability and availability of food supplies across the world, for poorer households in emerging and developing economies. More severe fuel shortages, especially for gas, could further reduce the global economic outlook by half a percentage point (OECD, 2022c).

The volatility across financial markets and the change in monetary policy, with moves towards higher interest rates by many Central Banks, notably the FED, will encourage capital flows towards safer assets and imply a higher cost of borrowing. Indeed, by end of July 2022, foreign investors had pulled funds out of emerging markets for five straight months, the longest streak of withdrawals on record (Wheatley, 2022).

The exact impact of the energy crisis on the green transition remains unclear. On the one hand, the large price increase for fossil fuels might incentivize the build-up of large-scale renewable energy projects. On the other hand, increased government subsidies for fossil fuels, as well as gas-to-coal switching, might lead in the short term to an increase in emissions. Currently, global coal consumption is forecast to rise by 0.7% in 2022 to 8 billion tonnes and is likely to increase further next year to a new all-time high (IEA, 2022).

All of these developments put sustainable finance in emerging markets under pressure and threaten to hinder the large-scale development of ESG-linked loans and assets in these economies. In addition to macroeconomic pressures, investors also face challenges in rethinking the way they assess ESG corporate and sovereign ratings. According to a Bloomberg analysis, at least 300 ESG funds held a total of approximately USD 8.3 billion in Russian assets right before the start of the invasion of Ukraine (Marsh & Schwartzkopff, 2022). Recent developments have raised the question of how much a firm's rating should be affected by the jurisdiction where it operates. Some ESG ratings providers have moved in this direction, including MSCI, which has

[13] The chapter builds on the work of the OECD Emerging Markets Network (EMnet) thematic Working Group on Business and Sustainability and on the findings of the EMnet "Business Insights on Emerging Markets 2022" publication.

downgraded Russia's sovereign ESG rating from B to CCC, its lowest level. Other companies, such as Sustainalytics, have indicated that they intend to review ESG ratings processes in response to the war (Gibbs & McDaniels, 2022).

5.2. Sustainable finance is not reaching emerging economies

Despite signs of recovery, global investment is not yet reaching the low-income countries, where health and education infrastructure is needed the most, increasing the risk of a greater divide between advanced and emerging economies. Lower-income countries were already facing difficulties mobilising investments related to the SDGs prior to the pandemic (OECD, 2020). Following the COVID-19 crisis, the financing gap for the SDGs – initially estimated in 2019 to be USD 2.5 trillion per year until 2030 (UNCTAD, 2020) – increased to USD 3.7 trillion in 2020 (OECD, 2020).

More efforts are needed to accelerate a net-zero transition. Annual investment in clean energy infrastructure is expected to rise from around USD 290 billion in 2020 to approximately USD 880 billion in 2030 (IEA, 2021b). This implies a historic surge in clean energy investment in developing and emerging economies, by more than seven times (to more than USD 1 trillion) by the end of the 2020s, with a particular focus on increasing spending in sub-Saharan Africa and Southeast Asia (IEA, 2021a). Projections indicate that by 2030, approximately 30% of clean energy investment will take place in Brazil, India and Mexico (IEA, 2021a). Yet, despite hosting two-thirds of the global population, emerging and developing economies (excluding China) currently account for only one-third of global energy investment and one-fifth of total clean energy investment (IEA, 2021a).

Mobilizing private finance requires enhancing the availability of capital from local sources and higher levels of investment from international providers (IEA, 2021a). Green bond issuances are increasingly utilized as means of mobilizing private finance, totaling approximately USD1 trillion in cumulative green bond issuance since market inception in 2007 (Climate Bond Initiative, 2020). Despite the COVID-19 crisis, demand for responsible investment has driven green bond issuance in 2020 to USD 77.7 billion (13% lower than in 2019) (OECD, 2020d). Yet, the growth in the green bond market is mainly dominated by issuers in developed markets, with emerging markets lagging behind. Emerging and developing markets (excluding China) have contributed only around 10% of the global issuance of clean-energy-related sustainable debt. In the past 20 years, most bond issuances have come from LAC, Southeast Asia and India, which are rapidly booming markets (IEA, 2021a).

Shifting 1.1% of the USD4.2 trillion in total financial assets held by banks, institutional investors and asset managers globally would bridge the gap in investment to finance infrastructures and programs needed for sustainable development (OECD, 2020). The main obstacle to mobilizing the required investment is the lack of domestic financial systems in developing countries, which further contributes to global financial inequalities. The risks are considerable for emerging markets. Africa will face transition risks associated with climate change, amplified by the fact that many of the continent's economies and jobs depend on minerals, energy and mining; however, adequate financing reaching the continent could mitigate this. In LAC, sustainable finance is critical to implementing a new development model and social contract and to enhancing regional co-operation, as domestic resource mobilization remains low, at 22.9% of gross domestic product (GDP) (OECD et al., 2021). Finally, in Emerging Asia, sustainable finance is crucial to financing the post-pandemic economic recovery. The region has been left with a degraded monetary and fiscal environment, prompting calls for innovative financing solutions to address healthcare system gaps, aid disrupted business and public services, and revive shattered job markets (OECD, 2022b).

5.3. Investors increasingly consider ESG criteria in their activities

Institutional investors held more than USD 100 trillion in assets in 2019. Mobilizing these investors through public-private collaboration would help mitigate risks, mainstream sustainability considerations and close the SDGs funding gap at a faster pace (OECD, 2021d). Private investors are starting to consider sustainability criteria in more of their activities using various instruments, even though emerging markets are not yet taking full advantage of this paradigm shift. The outlook seems quite positive, since, according to the Environmental Finance Bond Database, 2020 was another record-breaking year for the green, social, sustainability and sustainability-linked (GSSS) bond market, with total GSSS bond issuance reaching more than USD 600 billion – nearly doubling the USD326 billion issued in 2019 (Environmental Finance, 2021).

Beyond bonds, environmental, social and governance (ESG) assets are expected to exceed USD 50 trillion by 2025, accounting for one-third of global assets (Casanova and Miroux, 2021). According to the International Monetary Fund (IMF), ESG-linked debt issuance tripled to reach USD 190 billion in 2021, and sustainability-related equity fund flows also rose to USD 25 billion at the same timeframe. As of 2021, ESG investments represent 18% of foreign investment in emerging economies, excluding China (Gautam, Goel and Natalucci, 2022). Climate-related investments representing USD 130 trillion in assets under management signed net-zero pledges at COP26 through the Glasgow Financial Alliance for Net Zero (REUTERS, 2021). As a result of the COVID-19 pandemic, businesses are adopting sustainability criteria to enhance their own resilience and reduce risk across their operations, from their supply chains, production processes and employee relations to their business models and product offerings. Company performance on ESG criteria is also increasingly relevant to leveraging finance. Companies participating in EMnet meetings agree that governments can play a key role in providing incentives for businesses to transition towards more

sustainable investments through price signals, such as carbon pricing (IMF, 2021), or through tax incentives, if the investments align with the SDGs (OECD, 2021c).

Harnessing sustainable finance is crucial for developing countries to build a new financial ecosystem and invest in strategic plans. However, risks in financial stability and risks related to greenwashing could ramp up and should be monitored. Momentum was gained during the Glasgow COP26 climate change conference with the formation of the International Sustainability Standards Board, which will encourage unified ESG reporting. This comes at a crucial time, following the revelation that, according to Morningstar's classification system, ESG funds representing more than USD 1 trillion in assets were not delivering on their stated environmental, social or governance goals, resulting in the ESG tag being removed from more than 1 200 funds, or roughly one in five (Were, 2022). Some encouraging trends are appearing, such as in LAC, where the volume of green, social, and sustainable bonds issued doubled to USD 12 693 billion during 2020 (OECD et al., 2021).

During 2021, LAC countries have experienced an exceptional increase in sustainable bond issuance, nearly doubling the amount issued in 2020, which could be partly attributed to the evolving regulatory landscape and the update of the International Capital Markets Association Principles, as well as a response to growing social discontent (Moody's ESG Solutions Group, 2021). Despite uncertain regulation, Mexico also issued its first social gender bond through *Fideicomisos Instituidos en Relación con la Agricultura* (the Agricultural Trust Funds FIRA) aimed at funding gender initiatives (IDB, 2020). This gender bond exemplifies how methodologies can set KPIs that not only enhance the green transition but also connect with women's empowerment, a key element for an inclusive green transition. Beyond sovereign green bonds, there is a need to further support corporate and sub-regional bond issuance (OECD, 2021b).

Green debt issuers in emerging and developing economies use most of the proceeds for renewables projects (80% in India), yet companies point to the attractive offering from sustainability-linked bonds compared with green, social and sustainable bonds. Sustainability-linked bonds can flexibly fund clean energy transitions, providing borrowers with more flexibility in the use of proceeds, particularly in industries where transition is slow due to lack of technology or high costs. Companies participating in EMnet meetings agree that with the right KPIs, sustainability-linked bonds can increase the level of ambition of climate-related policies. The private sector is a leading issuer of sustainable debt, with a significant rise in sustainability-linked bonds, mainly among corporations in Brazil and Mexico. Examples of utilities and energy companies issuing sustainable bonds include Enel, with its corporate general-purpose SDG-Linked Bond; Eni, with its Euro-denominated sustainability-linked bond; and Snam, with energy-related transition bonds. Beyond bonds, IEnova was the first Mexican private company to obtain a green loan from the IFC (IEnova, 2019), and across emerging markets interest in sustainable finance has led to an increase in Second Party Opinions (SPOs) on the sustainability credentials of GSSS bonds or loans by companies like Moody's.

5.4. Sustainable finance could transform global value chains

If the right climate adaptation policies are not put in place in the short term, the weather effects from the climate crisis would have more dramatic consequences on the global supply chains than those felt during the pandemic (Grynspan, 2022), affecting both employment and productivity. Indeed, adaptation costs in the developing world could amount to between US 300 billion in 2030 and USD 500 billion by 2050 if mitigation targets are not met (UNCTAD, 2021b).

Sustainable supply chains can enhance resilience to future challenges. Participants in EMnet meetings agree that transitioning away from fossil fuels will require significant capital investment and has the potential to support wider sustainability and inclusion targets. The implementation of sustainable supply chains can be supported by coherent and stable regulatory frameworks. Innovative sustainable financing techniques and multi-stakeholder collaboration can help address these challenges.

The private sector, particularly SMEs, is considered a potential driving force for the circular transition, but the added complexity of the supply chain, along with a lack of critical scale for investment, are significant gaps in accelerating the transition. EMnet participants argue that sustainable and blended finance tools, along with the support of multinational companies, can play an important role in reaching the critical scale for investment and streamlining circular supply chains. From start to restart, a circular supply chain is much more integrated and collaborative than a traditional linear supply chain model. Reverse logistics, for instance, are an added link in the chain to ensure that parts get returned to the original manufacturer for recycling or reuse. One of the main measures needed to overcome investment barriers is to expand access to financing for the companies that are adopting circular business models (European Environment Agency, 2019). Governments can facilitate access to financing and broaden the range of financial instruments available for the private sector, including schemes to offer subsidized loans or credit guarantees to companies following circular economy principles (OECD, 2020g).

As set out by the IEA, the pathway to net-zero emissions brings substantial new opportunities for employment, with 14 million clean energy supply jobs predicted to be created by 2030. Estimates show that shifting to a circular economy could hold as much as USD 4.5 trillion of potential economic growth by 2030 (IEA, 2021b).

5.5. Challenges remain for sustainable finance in emerging markets

Stakeholders, investors, and financial institutions are putting increasing pressure on companies to track, report and measure their impact based on ESG criteria. These criteria can reduce the risk perception of investments and are increasingly seen as a competitive factor, yet more work is needed to ensure that their ratings are fit for purpose (OECD, 2020d). Market participants are still missing the relevant, comparable, and verifiable ESG data they need to properly conduct due diligence, manage risks, measure outcomes, and align investments with sustainable, long-term value (OECD, 2020f). EMnet participants therefore agree on the importance of identifying disclosure metrics that are effective indicators of impact and progress towards ESG objectives. A successful effort to tackle standards on climate disclosure is the Task Force on Climate-related Financial Disclosures, which aims to provide guidance on metrics to be used and recommendations for disclosing climate-related risks and opportunities for businesses (Task Force on Climate-related Financial Disclosures, 2021).

Companies participating in EMnet meetings note that phases in the value chain, namely design and procurement, could potentially become more locally based and thus increase job opportunities. Supply chain finance can play a key role in building sustainable supply chains, with a growing demand following the disruptions caused by the COVID-19 crisis. At the same time, the transition to greener models requires significant financing and working capital to pivot entire supply chains. Companies have been working with suppliers to improve their ESG scores to benefit from lower fees. Building innovative sustainable financing techniques, so that both companies and suppliers can plan and manage their capital needs, is critical to drive positive change in global value chains and capital markets (OECD, 2022d).

EMnet companies agree that progress on sustainable finance taxonomies can support standardization efforts and better guide financial decisions. However, the definition of sustainable finance is yet to be refined. The OECD report Developing Sustainable Finance Definitions and Taxonomies seeks to map how different economies are setting official definitions of sustainable finance. This includes China, with its updated Green Bond Endorsed Projects Catalogue removing coal production and the utilization of fossil energy (OECD, 2020a). Measures to develop green or carbon-intensive taxonomies are under way in emerging and developing economies, including Bangladesh, Brazil, Chile, Colombia, Indonesia, Kenya, Malaysia, Mexico, Mongolia, Peru, Singapore, South Africa, and Thailand, and regionally via the ASEAN Taxonomy for Sustainable Finance. Sustainable finance taxonomies developed for local capital markets require a pathway to align across sectors and economic plans as well as with international taxonomies (OECD, 2021b).

OECD efforts to support sustainable finance include the OECD Clean Energy Finance and Investment Mobilization (CEFIM) program (OECD, 2022a), which takes a multi-stakeholder approach to developing innovative and effective solutions to increase private sector participation in the low-carbon energy transition. Moreover, the World Bank, IMF, OECD and other organizations are working to establish a new global platform to support mobilizing affordable financing for a green economic recovery. The platform will explore potential policies and levers as well as new financial instruments that could be implemented in order to promote nature-based solutions, including sovereign sustainability-linked bonds (CGFI, 2021).

The lack of regulation around sustainable finance remains an obstacle for investors. Green or sustainability bond markets would benefit from the creation of an enhanced policy space across developing countries. Advanced economies have a role to play by providing incentives, such as optional preference schemes, in exchange for progress towards nationally determined contributions to accelerate climate action (UNCTAD, 2021a). Regulatory agencies in emerging economies need to provide a clear framework in the form of national road maps, policies, regulations, or guidelines, as well as disclose the existing social and environmental risks in the financial sector in order to foster investment in infrastructure and set out good practice expectations. Some agencies have started providing guidelines on specific instruments, such as the ASEAN Capital Markets Forum's Green Bond Standards in 2018 (ACMF, 2021).

Multilateral institutions such as development banks can also help increase sustainable investment in emerging markets. This is the case of the IDB Invest, which provided a USD 125 million financial package to ENGIE Energía Chile, a subsidiary of the ENGIE Group, with the aim of accelerating the decarbonization of the country's electricity matrix (IDB, 2021b). The IDB also supported Eletrobras in Brazil to develop its first green bond framework (GFL, 2021). Working with multilateral institutions represents increased opportunities to develop blended instruments that can help investors access these financial instruments and increase their credibility. For example, the IDB has developed a green bond platform to help issuers upload data on projects and money allocations, as well as KPIs that they are committing to. It provides investors with a way to compare the environmental performance of each bond and provides a benchmark for the market (IDB, 2021a).

5.6. There is scope for greater inclusion of SMEs in sustainable investments

EMnet participants raise the challenges that small businesses can encounter in the implementation of some sustainability standards and requirements. Research from the International Trade Centre (ITC) concludes that SMEs have tremendous potential to make an impact on achieving the SDGs through the employment they generate and the business practices they choose to adopt (ITC, 2021). However, many SMEs lack the necessary resources and expertise to undertake such measures, and EMnet participants advise legislators to ensure that sustainability requirements are proportional to the size of businesses.

Harmonisation of rules in different regions can also make it easier for SMEs to compete on a global scale. In order to help SMEs implement due diligence practices, the OECD Centre for Responsible Business Conduct is working on guidelines to scale responsible business practices across the whole value chain. This includes the development of effective tools for different stakeholders to support and facilitate SME due diligence implementation while ensuring accountability and the reasonableness of requirements (OECD, 2021e).

EMnet participants also stress the importance that sustainability requirements are proportional to the size of businesses. Harmonization of rules in different regions can also make it easier for SMEs to compete on a global scale. This includes the development of effective tools to support and facilitate due diligence implementation, while ensuring accountability and the reasonableness of requirements (OECD, 2021e). Examples of good practices are the World Wide Fund for Nature (WWF) programs, to help SME owners understand the importance of investing in resource-efficient technologies and how they can reap long-term monetary benefits (Annat, 2021), or capacity-building training from large businesses or governments to help SMEs implement due diligence and use instruments to address environmental and social risks. Some governments have also implemented financial support to incentivize SMEs to undertake such measures, including in Indonesia, where the government grants SMEs tax reductions and exemptions for pollution control equipment and water treatment (OECD, 2021e).

5.7. Blended finance can help to scale up sustainable investment

Scaling mobilization within the private sector through transaction structures such as blended finance is crucial to unlocking the financing needed for business transformation and to achieve the SDGs more widely. EMnet participants highlight opportunities to make better use of blended finance schemes in mobilizing commercial capital, and in particular to unlock the trillions of dollars held by institutional investors. Better use of blended finance can mobilize additional private capital and foster a pipeline of bankable projects. By working with local partners, developing capacity, and improving access to resources, blended finance can help to de-risk clean energy projects and make them attractive for lower-cost investment of private capital. An example of this includes BlackRock's Climate Finance Partnership (CFP), a unique blended finance fund provider of catalytic capital to promote climate-related investment in emerging markets (BlackRock, 2022).

EMnet participants highlight how blended finance can bring a solution to the issue of finding the right investment project, since large private investors generally focus on capital efficiency and thus seek transactions of a certain size, which are not always present in the least-developed countries, thus making it difficult for investors to justify investments in such areas. Blended finance can enable access to several sizeable deals that fit within investors' mandates with the help of national project preparation funds, provided that the investment and regulatory environment enables such collaboration via technical assistance tools and advisory services (OECD DAC, 2020).

International efforts supporting blended finance like the OECD DAC Blended Finance Principles (OECD DAC, 2020) can attract commercial investment by using a common framework and understanding of blended finance that ensures financial returns and contribution to sustainable development. Additionally, the OECD-UNDP Impact Standards for Financing Sustainable Development were designed to support donors in the deployment of resources through DFIs and private asset managers to maximise their positive contribution towards achieving the SDGs (DAC and DCD, 2021).

EMnet participants point to cost of capital as the main cost of renewables, as opposed to the relatively low-variable costs of running a solar plant or wind farm (IEA, 2021b). Despite being key drivers of green and inclusive growth (Koirala, 2019) and contributing to global economic activity, the cost of finance for MSMEs can far exceed that for larger companies (OECD, 2021a). In many emerging and developing economies, economy-wide nominal financing costs can be up to 1 500 basis points higher than the values for the United States and Europe, and can be even higher in riskier markets and segments (IEA, 2021a). Overall, in emerging and developing economies there is a shortage of clean energy investment opportunities with adequate risk and return characteristics that satisfy both key "green" criteria and key investor liquidity requirements. There is a need to develop and expand local capital markets, to attract the required investment and support long-term sustainability. Greater certainty over a pipeline of potential projects would also enable investors to invest in capacity building while taking calculated risks. Additionally, an Africa-led solution, the Programme for Infrastructure Development in Africa Quality Label, could improve the bankability and implementation of infrastructure projects on the continent (OECD/ACET, 2020).

EMnet participants emphasize the catalytic role that national and international DFIs can play in decreasing the cost of capital while improving companies' sustainability matrices. DFIs are relevant partners as debt providers to reduce the risks for private investors, and, in some cases, as shareholders or advisors to help penetrate certain markets, given their solid research departments as well as political support, which is particularly relevant for long-term projects. Examples include Voltalia working with BNDES (the Brazilian national development bank) and with other DFIs, such as the European Bank for Reconstruction and Development (EBRD). Yet, EMnet participants point to the need for collaboration to overcome potential mismatches between what agreed during the development phase and DFIs' procedure to approve operations.

EMnet participants stress the lack of information and data, including on anticipated project performance, as a major hindrance in mobilizing further private investment. Similarly, they indicated that building established track records of projects is a key

enabler, and provided examples in middle-income emerging markets, such as Chile and Peru, where United States insurance companies have invested in local currency for long-term infrastructure. South Africa's renewable procurement process also serves as a successful example of creating a track record, enabling significant private investment inflows. Another relevant issue is the capacity of smaller local developers to design and prepare these projects. On the efficiency side, challenges include a mix of unique project characteristics and scale, where lack of scalable project pipelines becomes a hurdle (OECD, 2021b). Due to their small scale, measures to improve energy efficiency can be difficult to finance, despite often being the most cost-effective method of reducing emissions (IEA, 2021a).

EMnet participants argue that in early-stage of energy projects, complex and lengthy procedures involved in contract negotiations, land access and acquisitions, as well as in licensing and permitting may pose hurdles to investments. Furthermore, a lack of standardization acts as an obstacle to the simplification of scalable contractual frameworks. Standardization of power purchase agreements (PPA) (e.g. project terms) can prepare projects to be pooled as securitized assets for trading in capital markets and ensure transparent negotiations.

5.8. Digital innovation facilitates sustainable finance

There is significant potential for digital transformation to promote sustainable practices and finance, by removing informational asymmetries and creating tools to help investors clearly assess risks. Big data, artificial intelligence, Internet of Things and blockchain are currently some of the promising technologies identified to mobilize sustainable finance, by making the analysis of data more accurate (The Sustainable Digital Finance Alliance, 2018). The Green Digital Finance Alliance (launched by Ant Financial Services and UNEP) uses a multi-stakeholder approach involving international organizations, DFIs and the finance sector to investigate the potential for digital finance to promote greater investment in line with the SDGs (GDFA, 2022).

In particular, companies highlight the role of innovation as a key lever in tackling financing challenges. Innovative financing structures and facilities can help project developers access long-term capital and de-risk investment, by making the access to data faster and cheaper and improving transparency. Creating innovative platforms may be a viable solution to provide the required scale of financing; this could be achieved by consolidating existing operational assets based in emerging markets. Fintech was discussed as an instrument allowing greater access to capital for smaller projects. The provision of real-time performance data makes it easier for investors to evaluate and price risks, also leading to more confidence in project returns. Simultaneously, fintech solutions can promote inclusion and empower women. Indeed, M-PESA in Kenya, a mobile money transfer solution, has allowed women to change their financial behavior as their consumption rates have increased and many have moved from farming to retail (ADB, 2019). The rising number of fintech solutions, such as Alibaba's Alipay or Paytm in India, allows women to move to more productive activities and increase their savings, thereby supporting formalization (ADB, 2019).

In addition, digital platforms are making it cheaper and easier to finance smaller-scale energy efficiency and renewable energy projects, and countries are applying these technologies to attract and raise capital from new investors (OECD, 2020b), facilitating the standardization of smaller projects and making project due diligence easier and less costly. New service models and digital payments can also address hurdles, especially in energy efficiency and electrification. As Internet penetration rates continue to increase, particularly in densely populated urban areas across emerging markets, EMnet participants see an opportunity for more information to be created through the aggregation of big data analytics. They point to such innovation potentially enabling innovative credit assessments, particularly to increase the financial inclusion of traditionally excluded populations. Such innovative approaches are particularly critical for mobilizing retail investors in many emerging and developing economies.

5.9. Conclusion

While sustainable finance is on the rise globally, emerging markets lagging behind. With private investors increasingly considering ESG criteria in their portfolio decisions, sustainable finance can provide a major opportunity to secure new sources of financing and contribute to social and economic development. Sustainable finance also has the potential to transform global value chains, by incentivizing the adoption of ESG criteria across suppliers.

Major obstacles remain for emerging markets to harness the potential of sustainable finance: enhanced policy space as well as clear definitions, standards and taxonomies are needed. Regulatory agencies can provide a clear framework in the form of national road maps, policies, regulations or guidelines, and ensure that reliable data is available on key ESG criteria. SMEs encounter difficulties in the implementation of sustainability standards and requirements, as they lack the necessary resources and expertise. Multilateral institutions such as development banks and development finance institutions can help in the alignment process, thereby decreasing the cost of capital while improving companies' sustainability matrices. Scaling mobilization from the private sector through transaction structures, such as blended finance, is crucial to unlock the financing needed for business transformation. Finally, innovative financing structures and facilities, by making the access to data faster and cheaper and improving transparency, can help project developers access long-term capital and de-risk investment.

References

ACMF (2021), ASEAN Green Bond Standards, ACMF, https://www.theacmf.org/initiatives/sustainable-finance/asean-green-bond-standards (accessed on 2 March 2022).

ADB (2019), Closing the Gender Gap in Financial Inclusion through Fintech, Asian Development Bank, https://www.adb.org/publications/closing-gender-gap-financial-inclusion-through-fintech (accessed on 15 March 2022).

Annat, L. (2021), Reaching the 95% Engaging SMEs to scale responsible business practices in the global garment & footwear supply chain, OECD, Paris, https://mneguidelines.oecd.org/OECD-Garment-Forum-2020-Session-Note-Engaging-SMEs-to-Scale-Responsible-Business-Practices.pd

ATC (2021), American Tower Corporation: Corporate Responsibility, https://www.americantower.com/corporate-responsibility/society.html.

BlackRock (2022), Climate Finance Partnership, BlackRock, https://www.blackrock.com/institutions/en-us/strategies/alternatives/real-assets/infrastructure/climate-finance-partnership (accessed on 2 May 2022).

Casanova, L. and A. Miroux (2021), Emerging Market Multinationals Report 2021: Building the Future on ESG Excellence, EMI Cornell, https://doi.org/10.7298/cvhn-dc87.

CBI (2020), $1Trillion Mark Reached in Global Cumulative Green Issuance: Climate Bonds Data Intelligence Reports: Latest Figures, https://www.climatebonds.net/2020/12/1trillion-mark-reached-global-cumulative-green issuance-climate-bonds-data-intelligence.

CBI (2022), Climate Bonds Initiative | Mobilizing debt capital markets for climate change solutions, Climate Bonds Initiative, https://www.climatebonds.net/ (accessed on 15 March 2022).

CGFI (ed.) (2021), Centre on Green Finance and Investment: 2021 Forum Agenda, CGFI, https://www.oecd.org/cgfi/forum/CGFI-Forum-2021-Agenda.pdf (accessed on 15 March 2022).

DAC and DCD (2021), Proposed Impact Standards for Financing Sustainable Development-Part 1: Proposed Standards, https://one.oecd.org/document/DCD/DAC(2021)6/FINAL/en/pdf (accessed on 15 March 2022).Environmental Finance (2021), Sustainable Bonds Insight 2021 published, Environmental Finance, https://www.environmental-finance.com/content/news/sustainable-bonds-insight 2021-published.html (accessed on 15 March 2022).

European Environment Agency (2019), Paving the way for a circular economy: insights on status and potentials, Publications Office of the European Union, Luxembourg, https://doi.org/10.2800/383390.

GDFA (2022), Green Digital Finance Alliance, https://greendigitalfinancealliance.org/ (accessed on 15 March 2022).

Gibbs, S. and J. McDaniels (April 21, 2022), Q2 2022 Sustainable Finance Monitor, Institute of International Finance, https://www.iif.com/Portals/0/Files/content/IIF_SFM_April_2022_FINAL.pdf (accessed on 5 August 2022).

GFL (2021), With IDB's support, Brazil's Eletrobras issues its first Green Bonds to finance electricity transmission lines, GFL, https://greenfinancelac.org/resources/news/with-idbs support-brazils-eletrobras-issues-its-first-green-bonds-to-finance-electricity-transmission lines/ (accessed on 2 March 2022).

Grynspan, R. (2022), Here's how we can resolve the global supply chain crisis | CNUCED, UNCTAD, https://unctad.org/fr/node/36277

IDB (2020), Mexico issues the first Social Gender Bond in the national stock market through FIRA, https://www.iadb.org/en/news/mexico-issues-first-social-gender-bond-national-stock market-through-fira.

IDB (2021a), IDB and IDB Invest launch the Green Bond Transparency Platform, IDB, https://www.iadb.org/en/news/idb-and-idb-invest-launch-green-bond-transparency-platform (accessed on 2 March 2022).

IDB (2021b), IDB Invest and ENGIE Chile debut the world's first pilot project to monetize the cost of decarbonization, IDB Invest, https://www.idbinvest.org/en/news-media/idb-invest-and-engie-chile-debut-worlds-first-pilot-project-monetize-cost-decarbonization (accessed on 2 March 2022).

IEA (2021a), Financing clean energy transitions in emerging and developing economies, IEA, Paris, https://www.iea.org/reports/financing-clean-energy-transitions-in-emerging-anddeveloping-economies.

IEA (2021b), Net Zero by 2050: A Roadmap for the Global Energy Sector, IEA, Paris, https://www.iea.org/reports/net-zero-by-2050.

IEA (2021c), World Energy Investment 2021, IEA, Paris, https://www.iea.org/reports/world energy-investment-2021.

IMF (2021), Securing a Green Recovery: The Economic Benefits from Tackling Climate Change, International Monetary Fund, https://www.imf.org/en/News/Articles/2021/04/15/sp041521- securing-a-green-recovery (accessed on 15 March 2022).

IEA (2022), Global coal demand is set to return to its all-time high in 2022, https://www.iea.org/news/global-coal-demand-is-set-to-return-to-its-all-time-high-in-2022 (accessed on 26 August, 2022).

ITC (2021), SME Competitiveness Outlook 2021: Empowering the Green Recovery, https://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/ITC_SMECO-2021.pdf.

Koirala, S. (2019), SMEs: Key drivers of green and inclusive growth, OECD Green Growth Papers, No. 2019/03, OECD Publishing, Paris, https://dx.doi.org/10.1787/8a51fc0c-en.

Marsh, A. and F. Schwartzkopff (March 8, 2022), ESG Funds Had $8.3 Billion in Russia Assets Right Before War, https://www.bloomberg.com/news/articles/2022-03-08/esg-funds-had-8-3-billion-in-russia-assets-right-before-the-war (accessed on 26 August 2022).

Mignano, K. and A. Geaneotes (2020), Leveraging Inclusive Business Models to Support the Base of the Pyramid during COVID-19, IFC, https://openknowledge.worldbank.org/bitstream/handle/10986/34307/Leveraging-Inclusive-Business-Models-to-Support-the-Base-of-the-Pyramid-during-COVID-19.pdf?sequence=1&isAllowed=y (accessed on 22 March 2022).

Moody's ESG Solutions Group (2021), ESG Data Guide 2021, https://www.environmental-finance.com/content/guides/esg-guide-entry.html?planid=2&productid=450&editionid=5.

OECD (2020a), Developing Sustainable Finance Definitions and Taxonomies, Green Finance and Investment, OECD Publishing, Paris, https://dx.doi.org/10.1787/134a2dbe-en.

OECD (2020b), Digitalisation Webinar - Opportunities for Fintech to Scale up Finance for Clean Energy, https://www.oecd.org/environment/cc/cefim/digitalisationwebinar-opportunitiesforfintechtoscaleupfinanceforcleanenergy.htm.

OECD (2020c), Global Outlook on Financing for Sustainable Development 2021: A New Way to Invest for People and Planet, OECD Publishing, Paris, https://dx.doi.org/10.1787/e3c30a9a-en.

OECD (2020d), Making the green recovery work for jobs, income and growth, OECD Publishing, Paris, https://www.oecd.org/coronavirus/policy-responses/making-the-green-recovery-work for-jobs-income-and-growth-a505f3e7/.

OECD (2020e), Multi-dimensional Review of Viet Nam: Towards an Integrated, Transparent and Sustainable Economy, OECD Development Pathways, OECD Publishing, Paris, https://dx.doi.org/10.1787/367b585c-en.

OECD (2020f), OECD Business and Finance Outlook 2020: Sustainable and Resilient Finance, OECD Publishing, Paris, https://doi.org/10.1787/eb61fd29-en.

OECD (2020g), The Circular Economy in Cities and Regions: Synthesis Report, OECD Urban Studies, OECD Publishing, Paris, https://doi.org/10.1787/10ac6ae4-en

OECD (2021a), Centre on Green Finance and Investment 2021 Forum, https://www.oecd.org/cgfi/forum/.

OECD (2021b), Clean Energy Finance and Investment Policy Review of Indonesia, Green Finance and Investment, OECD (2021), Clean Energy Finance and Investment Policy Review of Indonesia, Green Finance and Investment, OECD Publishing, Paris, https://doi.org/10.1787/0007dd9d-en.

OECD (2021c), Investment and sustainable development: Between risk of collapse and opportunity to build back better, OECD, Paris, https://www.oecd.org/investment/Between-risk of-collapse-and-opportunity-to-build-back-better.pdf (accessed on 15 March 2022).
OECD (2021d), Mobilising institutional investors for financing sustainable development in developing countries: Emerging evidence of opportunities and challenges, OECD, Paris.
OECD (2021e), SME-tailored due diligence, OECD, Paris, https://mneguidelines.oecd.org/Session-note-2021-OECD-Garment-Forum-SME-tailored-due-diligence.pdf.
OECD (2022a), Clean Energy Finance and Investment Mobilisation, OECD, https://www.oecd.org/cefim/ (accessed on 15 March 2022).
OECD (2022b), Economic Outlook for Southeast Asia, China and India 2022: Financing Sustainable Recovery from COVID-19, OECD Publishing, Paris, https://dx.doi.org/10.1787/e712f278-en.
OECD (2022c), OECD Economic Outlook, Interim Report September 2022: Paying the Price of War, OECD Publishing, Paris, https://doi.org/10.1787/ae8c39ec-en.
OECD (2022d), Business Insights on Emerging Markets 2022, OECD Emerging Markets Network, OECD Development Centre, Paris, http://www.oecd.org/dev/oecdemnet.htm.
OECD/ACET (2020), Quality Infrastructure in 21st Century Africa: Prioritising, Accelerating and Scaling up in the Context of Pida (2021-30), https://www.oecd.org/dev/Africa-Quality-infrastructure-21st-century.pdf.
OECD DAC (2020), OECD DAC Blended Finance Principle 4: Focus on Effective Partnering for Blended Finance, https://www.oecd.org/dac/financing-sustainable-development/blended finance-principles/documents/Principle_4_Guidance_Note_and_Background.pdf (accessed on 15 March 2022).
OECD et al. (2021), Latin American Economic Outlook 2021: Working Together for a Better Recovery, OECD Publishing, Paris, https://dx.doi.org/10.1787/5fedabe5-en.
REUTERS (2021), COP26 coalition worth $130 trillion vows to put climate at heart of finance, REUTERS, https://www.reuters.com/business/cop/wrapup-politicians-exit-cop26-130tn-worth-financiers-take-stage-2021-11-03/ (accessed on 2 March 2022).
Sustainable Stock Exchanges Initiative (2009), Brazil Disclosure reference form, Sustainable Stock Exchanges Initiative, https://sseinitiative.org/securities-regulator/disclosure-reference form-2009/ (accessed on 15 April 2022).
Task Force on Climate-related Financial Disclosures (2021), 2021 Status Report, Task Force on Climate-related Financial Disclosures, Basel, https://www.fsb.org/wp content/uploads/P141021-1.pdf (accessed on 15 March 2022).
The Sustainable Digital Finance Alliance (2018), Digital Technologies for Mobilizing Sustainable Finance: Applications of Digital Technologies to Sustainable Finance, The Sustainable Digital Finance Alliance, https://docs.wixstatic.com/ugd/3d4f2c_6767ef5b999c4e3fa42c0e05e6ea2ac3.pdf (accessed on 15 March 2022).
Trench, Rossi and Watanabe (2021), Brazil: The Central Bank of Brazil publishes new ESG regulations for the National Financial System, Lexology, https://www.lexology.com/library/detail.aspx?g=df2fb8da-aa16-4f16-a380-a2ced5484a1a (accessed on 15 April 2022).UNCTAD (2020), World Investment Report 2020 (Overview), United Nations Conference on Trade and Development 6 (52)
UNCTAD (2021a), Trade and Development Report 2021, United Nations, New York, https://unctad.org/system/files/official-document/tdr2021_en.pdf.
UNCTAD (2021b), Scaling up climate adaptation finance must be on the table at UN COP26, UNCTAD, https://unctad.org/news/scaling-climate-adaptation-finance-must-be-table-un-cop26
Were, A. (2022), How can Africa benefit from the private sector's growing interest in climate finance?, Development Matters Blog, https://oecd-development-matters.org/2022/03/17/how can-africa-benefit-from-the-private-sectors-growing-interest-in-climate-finance/ (accessed on 22 March 2022).
Wheatley, J. (July 31, 2022), Emerging markets hit by record streak of withdrawals by foreign investors, https://www.ft.com/content/35969b19-86db-4197-a419-b4a761094e9a (accessed on July 31, 2022).

Chapter 6

INNOVATIVE AND DIGITAL FINANCIAL SOLUTIONS FOR MSMES IN THE POST-COVID ERA

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Executive Summary

Global value chains (GVCs) have faced a turbulent past few years, in the wake of the Covid 19 pandemic and the Russia-Ukraine conflict. This instability has highlighted the interconnectedness between countries via GVCs, but also raises questions about the risks, uncertainties, and dependencies they have created. The sudden shock to global trade has reverberated beyond large companies to small businesses in emerging markets, which have increasingly participated in the global economy over the past few decades. These conditions have added urgency for digital solutions to ease the cost of doing business and improve access to finance for micro-, small-, and medium-sized enterprises (MSMEs). This chapter discusses some of the major trends in digital financial solutions for MSMEs through the IFC experience and highlights the need for further responsible investment and innovation in this space. Financial innovations like supply chain finance (SCF), embedded finance, and electronic warehouse receipt (EWR) financing have the potential to integrate MSMEs into GVCs while safeguarding the financial stability and integrity of the global trade ecosystem.

Keywords: Global Value Chains, Russia-Ukraine conflict micro-, small-, and medium-sized enterprises (MSMEs)*, emerging markets, digital financial solutions, financial innovations, supply chain finance (SCF), electronic warehouse receipt (EWR)*

6.1. Introduction

Global value chains (GVCs) have faced a turbulent past few years. The COVID-19 outbreak disrupted supply chains of essential goods, which has led to shortages of medical supplies, food, and other key necessities. This has been further exacerbated by the current Russia-Ukraine conflict, which has had a pointed impact on agricultural supply chains – specifically for wheat and grain. This instability has highlighted the interconnectedness between countries via GVCs, but also raises questions about the risks, uncertainties, and dependencies they have created. A Fortune Magazine survey found that 94% of Fortune 1000 companies reported supply chain disruptions because of the COVID-19 pandemic.[14] The sudden shock to global trade has reverberated beyond large companies to small businesses in emerging markets, which have increasingly participated in the global economy over the past few decades. A UNCTAD study found that microenterprises were more likely to be affected by supply chain disruption than large companies. 64% of microenterprises reported being "strongly affected" by the pandemic versus 43% of large companies, resulting in lower levels of financing to the sector.[15] These conditions have added urgency for digital solutions to ease the cost of doing business and improve access to finance for micro-, small-, and medium-sized enterprises (MSMEs). Digitalized MSMEs are also more likely to have access to international markets. Financial innovations like supply chain finance (SCF), embedded finance, and electronic warehouse receipt (EWR) financing have the potential to integrate MSMEs into GVCs while safeguarding the financial stability and integrity of the global trade ecosystem.

Participation in GVCs, the international fragmentation of production, has steadily grown over the past several decades. Gaining steam in the post-WWII era, global trade volume spiked during the globalized era in the 1980s and has continued its rapid expansion since. The World Trade Organization (WTO) estimates that global trade volume increased by 4100% between 1950 to 2020.[16] During this time, local and regional supply chains – once confined to countries and their neighbors - matured into a vast and complex global distribution phenomenon that has brought gains in efficiency and economies of scale. Much of the Global South has benefited from GVCs as evidence shows their participation in the global economy had led to increased job creation and economic growth. Today, manufacturing of a product is often split across multiple countries, as raw materials turn into

[14] Sherman, E. (2020). 94percent of the Fortune 1000 are seeing coronavirus supply chain disruptions. New York: Fortune.
[15] United Nations Conference on Trade and Development. (2022). The COVID-19 pandemic's impact on micro-, small-, and medium-sized enterprises.
[16] World Trade Organization. (2022). Evolution of trade during the WTO: handy statistics.

finished goods with each stage of the process. The garment industry supply chain, for example, may start with cotton and natural fibers grown in Brazil, which are then shipped to European mills for processing, before being shipped to workshops in Bangladesh for assembly based on designs made in New York. This revolution in value chains has allowed low- and middle-income countries to participate in global trade. Globalization has allowed countries to do more than exchange products – it has strengthened national economies. One of the main findings of a recent World Bank report finds that during a crisis (such as the COVID-19 pandemic), countries more deeply integrated into GVCs recovered more quickly than others.[17] Countries can grow and diversify their economies by moving to higher value-added tasks while also integrating better technology and stronger global practices into their agriculture, manufacturing, and services sectors.

The outsourcing of both labor- and capital-intensive goods across the globe also grew the need for effective supply chain management and financing for the burgeoning sector. This is one reason why the International Finance Corporation (IFC) is helping our clients understand the role that GVCs can play in delivering growth, increasing regional and global integration, and managing external shocks. As a member of the World Bank Group, IFC is the largest global development institution focused exclusively on the private sector in developing countries. IFC addresses access to finance challenges for MSMEs by investing and advising leading financial sector players, including those in SCF, embedded finance, and EWR finance. For over twenty years, IFC has played a pioneering role in the financial inclusion sector by investing in over 800 institutions, banks, microfinance providers, non-banking financial institutions and funds.

This chapter discusses some of the major trends in digital financial solutions for MSMEs through the IFC experience and highlights the need for further responsible investment and innovation in this space. SCF, embedded finance, and EWR finance represent three such innovations to strengthen and grow GVCs in the post-COVID era.

6.2. MSMEs and COVID-19

MSMEs sit at the crossroads of consumers, suppliers, distributors, local governments, and financial service providers and are therefore an important gateway to solve access to finance issues among small business in emerging markets. However, many MSMEs in developing economies are either unserved or underserved by the formal financial sector. There is a formal MSME finance gap of over USD 5.2 trillion and the finance gap among informal MSMEs is estimated to be an additional USD 2.9 trillion.[18] According to IFC estimates, more than 200 million formal and informal MSMEs in developing economies are either unserved or underserved in terms of their financing needs. This financing gap was exacerbated by the COVID-19 pandemic, which tipped off an unprecedented global recession with adverse consequences for MSMEs.

IFC's Base of the Pyramid program supports MSMEs during the COVID crisis

IFC's Base of the Pyramid (BOP) Program is a USD 600 million global financing facility designed to help IFC's financial service provider clients serving the BOP, including microfinance institutions, non-bank financial institutions and banks focused on MSMEs, address the operational and financial impacts of COVID-19.

Through our support, the Program intends to help these critical BOP FSPs to remain viable despite the pandemic by helping them stabilize, providing near-term support, sustaining their operations into the recovery period, and supporting the ongoing operations of their MSME clients.

Global trade has been a vital pathway for emerging markets' inclusion into the global economy - contributing to economic growth, job creation, the provision of goods and services, and poverty alleviation. According to a recent World Bank Group report, the growth of GVCs contributed to an increase in the share of low- and middle-income countries in global exports, from 16 % to 30 % between 1990 and 2017.[19] Concomitantly, the proportion of the world's population living in extreme poverty has fallen from 36 % to 9 %. The integration of MSMEs into GVCs has been a big driver for this trend. The importance of MSMEs to job creation and economic growth is one reason why IFC implemented - as the pandemic unfolded - the Base of the Pyramid (BOP) Program, a USD 600 million global financing facility designed to support the financial sectors of emerging markets. Financial sectors play a critical role in mitigating the macroeconomic shock and impact on the informal sector and MSMEs in emerging markets. Enabling the sustainability of MSMEs' operations could mitigate the anticipated longer-term impact from the pandemic on economic growth and livelihoods.

6.3. The growth of digital financial services and e-commerce

The COVID-19 pandemic set off a volatile period as social distancing, lockdowns, and disrupted trade led to uncertain demand, reduced supply, tightening of credit conditions, and rising uncertainty. These conditions accelerated an ongoing trend in digital

[17] Brenton, Paul; Michael J. Ferrantino; Maryla Maliszewska. (2022). Reshaping global value chains in light of COVID-19 implications for trade and poverty reduction in developing countries. World Bank Group.
[18] SME Finance Forum. (2017). MSME finance gap: assessment of the shortfalls and opportunities in financing micro, small, and medium-sized enterprises in emerging markets.
[19] Brenton, Paul; Michael J. Ferrantino; Maryla Maliszewska. (2022). Reshaping global value chains in light of COVID-19 implications for trade and poverty reduction in developing countries. World Bank Group.

transformation and the uptake of digital financial services. Some companies have embraced a digital transformation of their business processes utilizing technologies like cloud computing, data analytics, distributed ledger technology such as blockchain, artificial intelligence, and automation - to reduce costs and inefficiencies in their business processes. Digital finance, often enabled by tech companies, has revolutionized payments, lending, commerce, and other financial services by combining seamless customer experiences with lowered costs while increasing the speed, security, and transparency of transactions. Customer and business behaviors have shifted as result of COVID-19, providing the impetus for the transition to more digital ecosystems and inclusive financial services.

The accelerated trend towards digitalization includes a rapid expansion of e-commerce, which provides an online marketplace for buyers and sellers. Early data shows that global retail e-commerce sales have jumped from USD 3.5 trillion to USD 4.9 trillion between 2019 and 2021 – a jump of nearly 40%. [20] E-commerce has become a pathway for MSMEs' integration into global supply chains. MSMEs that have onboarded onto e-commerce retailers often have increased access to customers, higher sales conversions, and access to foreign markets. E-commerce can also drive financial inclusion as online retailers produce a transparent record of transactions, which allows financial institutions to underwrite working capital loans to MSMEs based on their operations. E-commerce also has many advantages for supply chain management. It reduces search and distribution costs for products while providing real-time information about inventory levels that can help companies make timely decisions and avoid supply chain disruptions. These conditions serve to boost the development of SCF and embedded finance. The growing digital connectivity of small businesses allows SCF providers to offer services to businesses that previously lacked access to working capital.

Mintifi: Innovating SCF solutions to small businesses in India

Founded in 2017 in Mumbai, Mintifi is a startup that partners with corporates and provides for the working capital needs of their distributors. It operates a digital lending platform that specializes in facilitating financing to MSMEs. Mintifi solves the pain points of serving MSMEs through the traditional financing model - lack of data to underwrite borrowers and the high transaction costs of working with small and informal businesses.

Mintifi has partnered with close to 100 leading corporates in India who collectively are providing products and services to over 1 million distributors/dealers and retailers. Through leveraging the distribution network of these anchor partners and its online platform, Mintifi reaches out to MSME business owners, thereby eliminating the need for direct selling agents. The Mintifi platform simplifies the loan application process and eliminates the collateral requirement. This digital approach has led to strong adoption of Mintifi's services, with nearly 27,000 MSMEs onboarded.

6.4. Supply chain finance

SCF has grown in prominence in recent years as a way to reduce the risk of supply chain disruption. It is a process where a financial institution provides financing to a supplier - an MSME, for example - on behalf of the buyer. For instance, say a buyer purchases an order of goods from an MSME. Typically, the MSME would ship the goods to the buyer, then submit an invoice to be paid within 30 days. SCF makes it possible for the MSME to receive payment for the invoice faster (and give the buyer extended payment terms) by bringing in a third-party lender who will pay the invoice immediately on behalf of the buyer. Both buyer and supplier benefit from improved working capital. US-based GT Nexus, an IFC partner, provides a cloud-based collaboration platform that IFC clients use to manage their supply chain process and resolve their short-term financing needs. In this process: a supplier creates an e-invoice on GT Nexus; the buyer confirms acceptance; GT Nexus sends the suppliers' funding request to IFC; IFC reviews the funding request and upon approval sends payment; GT Nexus sends payment to the supplier; the buyer pays invoice through GT Nexus at maturity; and finally IFC receives funds at maturity from GT Nexus.[21] SCF opens a new avenue of trade financing for MSMEs that may not be available otherwise due to creditworthiness or collateral requirements. According to an IFC report, more than 80% of trade finance is secured by some form of collateral or guarantee and more than 50% of MSME requests for trade finance are rejected by banks in emerging markets.[22] SCF offers a range of financial products that provides suppliers, including MSMEs, easier access to capital and at lower cost. Businesses also benefit from SCF through increased sales, reduced unit costs, improved cash conversion/liquidity, extended payment terms, and better inventory management.

SCF represents a broad set of financial products that can be split into two categories:

[20] eMarketer. (2021). Retail e-commerce sales worldwide 2016-2021.
[21] International Finance Corporation. (2022). Technology and digitization in supply chain finance handbook.
[22] International Finance Corporation. (2014). Supply chain finance knowledge guide.

1. **Receivables purchase-based**: Banks finance MSMEs through purchasing (either a portion or in its entirety) of their receivable. These receivables are taken off the balance sheet of the business and the rights to accept the receivable are taken over by the bank. In this exchange, the MSME receives an advanced payment minus a margin taken from the receivable by the bank for the service. Receivables purchase-based products can take the form of: (1) receivables discounting, (2) forfaiting, (3) factoring, (4) reverse factoring.
2. **Loan-based**: Banks finance buyers and sellers through providing loans against receivables, purchase orders, and inventory. In this category, the receivable stays on the balance sheet of the business, with the underlying asset used as collateral. Loan-based products can take the form of: (1) loan/advance against receivables (2) distributor finance, (3) loan/advance against inventory, (4) pre-shipment finance.

Tienda Pago: Using big data to provide swift financial access to small merchants in Latin America

Launched in 2014, Tienda Pago operates a digital platform in Mexico and Peru that specializes in distribution finance. Merchants, including micro-retailers, often have limited cash availability to pay distributors, which leads them to buy limited inventory, thereby reducing potential sales. Additionally, they rely on small, frequent orders which increases overall costs. To deal with these pain points, Tienda Pago offers a credit line that allows small merchants to purchase inventory on credit at the time of delivery.

Tienda Pago emerged in the market as a fintech lender that targets small shops that sell consumable goods like packaged food, personal care products, and over-the-counter medicines - part of a 'Fast Moving Consumer Good' (FMCG) distributor chain. The core product is a 7-day credit line enabling small merchants to purchase inventory on credit at the time of delivery. It offers instant, uncollateralized working capital loans by integrating a mobile platform with the operations of FMCG distributors.

For decades, SCF has been the domain of international banks that focused on cross border trade. However, its widespread adoption has been hindered by weak recourse environments, high costs, and a lack of quality data. The trade finance gap has been estimated at USD 1.7 trillion globally, with small businesses heavily impacted.[23] Increasing digitalization of the global trade ecosystem, such as the digitization of invoices, has paved the path for a deepening of SCF offerings for suppliers. Digitization has produced data footprints that have made it easier for SCF transaction flows to be cleared and monitored, helping to bridge the trust gap between lenders and borrowers. In turn, this fosters the growth of SCF programs whereby a distributed network of buyers, suppliers, and financiers can operate via digital platforms.

SCF solutions come in many forms depending on the size, maturity, and scale of a bank's operations. Large international banks like Citibank, Deutsche Bank, and Santander have built in-house SCF platforms. Smaller financial institutions, specifically those focused on MSMEs, often outsource SCF technology from a third party, which allows them to provide financing while avoiding the credit process. SCF solutions can be outsourced through licensing from a technology platform that is integrated with the financial institution's core banking system; working with a company providing software as a service (SaaS) that is responsible for hosting and managing transactions; or participating in a marketplace as one of multiple funders.[24] The marketplace option enables banks to bid on invoices through auctioning as buyers and suppliers can choose a funder based on price and other needs. Smaller financial institutions can select technology solutions that match their needs as new and emerging SCF platforms focus on onboarding more MSMEs.

SCF solutions helped to mitigate disruptions to the supply chain caused by the COVID-19 pandemic. As the pandemic forced lockdowns and border closings, business faced a sudden drop in revenue, canceled orders, uncertain future cash flows, and tightened credit terms from lenders. To preserve liquidity, many provided discounts to clear out their inventory and accepted early payments to cash in receivables. During this time, there was a surge in interest trade finance programs, particularly among emerging economies. IFC's Global Trade Supplier Finance (GTSF) Program, which provides short-term financing to suppliers that sell to large domestic buyers or export to international buyers, saw total commitments rise from USD 1.2 billion in 2019 to over USD 2 billion in 2021. Sixty-five % of this volume was disbursed to suppliers based in six lower middle-income countries: Bangladesh, Cambodia, Honduras, Pakistan, Sri Lanka, and Vietnam.[25] GTSF's increase was a result of higher volumes financed by existing suppliers in the program and by new anchor buyers – typically large multinational corporations that operate as buyers in a trade relationship – that joined in 2020. The pandemic reinforced the value of SCF as a tool to help suppliers access finance and to stabilize supply chains globally.

[23] Beck, Steven; Kijin Kim; Ma. Concepcion Latoja; Mara Claire Tayag. (2021). 2021 Trade finance gaps, growth, and jobs survey. Asian Development Bank.

[24] EMCompass. (2017) Technology-enabled supply chain finance for small and medium enterprises is a major growth opportunity for banks. International Finance Corporation.

[25] World Bank Group. (2022). World development report 2022: finance for an equitable recovery.

6.5. Embedded finance

Embedded finance has emerged in recent years as a new way to insert financial services onto non-financial platforms. This innovative financing mechanism has become integrated into e-commerce, logistics, and inventory management platforms. Financial services are now seamlessly offered to customers by non-banks, typically fintechs, that leverage big data, APIs, and automation to operate in data scarce environments where a borrower's credit history is limited or unreliable. Buy Now Pay Later (BNPL) is a popular embedded finance business model used on e-commerce platforms that provides payment plans for buyers at the point of transaction. This paradigm shift has lowered barriers to entry for digital-first companies to build products that reduce customer friction, lower costs, and mitigate credit risks for the loan provider, while generating higher sales conversions and larger basket sizes for the seller. Embedded finance has rapidly grown in the past few years with estimates that it accounted for 5 % of total US financial transactions in 2021, with a projected growth to over 10 % by 2026.[26] The rise in demand for embedded finance is driven by both consumer and business need for a streamlined financing option at the point of sale. Embedded finance solutions can help MSMEs access new avenues for financing and growth. As digital platforms onboard MSMEs into an online marketplace, data is collected on the business's sales patterns, inventories, and other activities. This, in turn, allows lenders to access transparent and reliable data to accurately assess their risk and offer working capital loans to businesses that lack collateral. By integrating their operations into a digital platform, MSMEs can accept payments and access financing while circumventing legacy financial systems.

N-Frnds provides supply chain solutions to small businesses in Asia

Founded in 2014, N-Frnds is a Singapore-based startup that operates a B2B commerce platform for the last mile in emerging markets. N-Frnds uses data, technology, analytics, and on-the-ground operations to reach small vendors. N-Frnds partners with financing companies, global manufacturers, and wholesalers to digitize the value chain for small vendors through their platform. N-Frnds partners with wholesalers to create a network of shared local warehouses for last mile distribution. Small vendors' sales transaction data is then fed into N-Frnds' AI-based credit scoring, which allows financing partners to offer them loans. Vendors see sales growth as they are offered streamlined services and promotions through the N-Frnds platform.

N-Frnds has partnerships with consumer brands and financial services companies including Coca Cola, Unilever, and others. The N-Frnds Technology platform has over 20 million users and was selected by Mastercard and Microsoft as their last-mile distribution platform for reaching MSMEs in emerging market value chains. N-Frnds has established operational networks in Indonesia and Philippines and is in process of expanding to Vietnam and across the region.

Platforms are partnering across the new value chain to embed financial services into invoicing, e-commerce, and other transactions. Some examples include e-commerce companies like Amazon provide working capital loan to merchants selling on their platform; logistics companies like Uber offer advances to drivers against receivables from trips; and tech companies like n-Frnds offer inventory management and financing to small retailers. In emerging markets as well, e-commerce and logistics platforms are embedding financial services into their offering. Since 2017, Nigeria-based Jumia – "the Amazon of Africa" – has partnered with IFC-investee Branch, a US-based mobile lender, to use alternative data and artificial intelligence for credit scoring and lending to merchants on their platform. Nigeria-based Kobo360 uses its logistics platform for truck drivers and small-fleet operators in Ghana, Kenya, Nigeria, Togo, and Uganda to offer working capital financing to drivers based on their cash flow and other metrics. The company can also automate loan repayments as payments for trips booked on the platform flow through Kobo360's systems. Embedded finance solutions provide visibility on a customer's transactions and use of funds, which allows lenders to work with customers and businesses that may not have a credit history.

Embedded finance has the potential to ease gridlocks in the supply chain. Many MSMEs rely on multiple systems to receive payments from customers and access working capital loans from their lender. This fragmented system imposes high costs to companies, especially MSMEs that struggle to access the global marketplace or secure loans. Embedded finance solutions can provide process efficiencies to streamline transactions across the value chain. To succeed, embedded finance solutions need increased collaboration across all stakeholders within the supply chain including tech platforms, fintechs and traditional financial institutions, MSMEs and large companies.

[26] Bain and Company. (2022). Embedded finance: what it takes to prosper in the new value chain.

6.6. Electronic warehouse receipt finance

The COVID-19 pandemic caused unprecedented stresses on agricultural supply chains that affected farm production, processing, transport, and customer demand. Farms faced bottlenecks for inputs such as seed and fertilizer; processors were disrupted by labor shortages and shutdowns; and physical distribution was disrupted by lowered access to air freight and cross border shipping.

IFC's project in Pakistan to support electronic warehouse receipt financing

Agriculture is one of the biggest sectors in Pakistan's economy, contributing 24 percent to its GDP. It is also the largest employer in the country, accounting for 45 percent of the country's labor force. However, the sector faces limited access to finance, volatility in input and output prices, natural disasters, and weak infrastructure. Lack of warehouse and storage facilities is a major bottleneck in Pakistan's agriculture sector. It is estimated that post-harvest losses for grains are 15-18 percent, and 25-40 percent for produce.

IFC has been working with the State Bank of Pakistan to increase access to finance to farmers and agribusinesses. The project aims to promote the use of commodity inventories in warehouses as collateral to access short term financing from lending institutions. The scope of the project is to enhance the legal and regulatory environment for EWR and build the capacity of the regulators, warehouse operators, and financial institutions.

Agricultural supply chain disruption during COVID-19 is especially impactful in emerging markets as about 65 % of the world's poor make a living through agriculture.[27] One persistent challenge for farmers is an unpredictable agriculture market, which sometimes forces them to sell their commodities at suboptimal prices to meet urgent financial needs. This highlights the need for easier access to finance for farmers. EWR financing is a lending method that allows farmers and traders of agricultural commodities to access loans by pledging their warehouse receipts – proof of ownership of commodities stored in a warehouse – as collateral. With this method of financing, banks use farmers' produce as collateral as opposed to their fixed assets. As a result, farmers' immediate financial needs can be met, giving them flexibility in timing the sale of their crops and circumventing volatile and seasonal pricing. EWR increases market efficiency, which can boost farmers' income. Warehouse receipt financing benefits farmers and others in the agricultural supply chain who are often unable to secure traditional finance because of their inability to meet conventional collateral requirements. It can also reduce farmers' post-harvest losses by creating a framework of accountability among market participants.

6.7. Looking forward

Since 2020, the global economy has hit several bumps – the COVID-19 pandemic which disrupted industrial and agricultural output; loose fiscal and monetary policies globally; pent up demand for industrial inputs and commodities that exposed supply chain bottlenecks caused by the pandemic; and the Russia-Ukraine conflict. In the backdrop of this supply chain crisis, innovative financial services have worked behind the scenes to ease the flow of working capital to businesses operating in global trade. Access to finance for buyers and suppliers operating in GVCs is often constrained due to weak recourse environments, high costs, and unreliable data. The shift towards digitalization and e-commerce over the last decade provides the backbone for these new financial offerings to fix pain points in GVCs. Digital ecosystems connect buyers, suppliers, and financial service providers and leave a trail of data that can be used to manage risk, lower costs, and increase the speed and transparency of financial transactions. MSMEs represent most businesses worldwide, however their participation in international trade remains partly limited due to lower levels of digital adoption. Policymakers and stakeholders should prioritize MSME digitalization to ensure their growth and resilience. SCF, embedded finance, and EWR solutions represent a new and cost-effective way to stabilize the supply chain and foster the inclusion of MSMEs into the global marketplace.

The COVID-19 pandemic has had profound consequences for GVCs which will be felt for years to come. The focus of many governments and business leaders has inevitably been on navigating the short term economic and societal implications of the crisis. However, from the outset there have been other organizations.

[27] World Bank Group. (2016). Who are the poor in the developing world?

Chapter 7
MULTI-LATINAS: AGENTS OF CHANGE IN EMERGING MARKETS

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Executive Summary

Latin America and the Caribbean (LAC) has been one of the regions most impacted by the COVID-19 crisis and only some sectors were able to recover by the end of 2021. Moving forward, as a complement to public sector efforts on fiscal and monetary policy, the private sector must play a key role in accelerating the region's recovery. Multilatinas can play an important role as agents of change in emerging markets through their unique capacity to create jobs, innovation, and investment. Research on multilatinas provide a general overview of these business, what motivates them, and how they differ from other multinational firms. The IDB works through many initiatives to embolden them to generate a positive socioeconomic impact in the communities in which they operate, including IndexAmericas, which was designed to encourage and recognize corporate sustainability behaviors among corporations operating in LAC. As companies continue emerging and expanding throughout the region, sustainability must be a core focus for these firms.

Keywords: Latin America and the Caribbean, Multilateral Development Bank, Private Sector, Multilatinas, Sustainability, ESG, Development

7.1. Introduction

Latin America and the Caribbean (LAC) has been one of the regions most impacted by the COVID-19 crisis. A 2022 joint report[28] by the Inter-American Development Bank (IDB) and the Center for Global Development reveals that revenues of listed firms in LAC fell by about 20% at the peak of the pandemic. It notes that only some sectors –mostly those related to agriculture and higher capital-intensive manufacturing– were able to recover by the end of 2021, while others, particularly those related to services such as tourism and hospitality, continue struggling with revenues below pre-pandemic levels. At the same time, the crisis compressed the region's labor markets and employment is recovering more slowly than economic activity, exacerbating challenges related to skills development and equal participation in the labor market.

Though 2020 brought on the worst single-year recession in LAC's history and a 7% contraction in GDP according to the LAC Macroeconomic Report (IDB, 2022), growth rebounded in 2021 and the region is expected to return to an average growth rate of around 3.5% in 2022 and 1.7%in 2023 as forecasted by the International Monetary Fund. Yet moving forward, as a complement to public sector efforts on fiscal and monetary policy, the private sector must play a key role in accelerating the region's recovery and fortifying local economies.

In particular, multilatinas – or Latin American businesses that have grown beyond their own national borders, but whose customers, revenue, and operations remain largely focused within the region (Deloitte, 2016) – can play an important role as agents of change in emerging markets through their unique capacity to create jobs, innovation, and investment. In this chapter, we will provide a birds' eye overview of the state of multilatinas in the region and introduce IDB-led efforts to embolden these firms as agents of change in LAC.

7.2. A Bird's Eye View of Companies in LAC

Foreign direct investment (FDI) plays an important role in fostering the internationalization of businesses and unleashing economic growth, and LAC has increasingly become a source of such investment flows thanks to its abundance of multinationals[29] and multilatinas.

[28] Center for Global Development and Inter-American Development Bank (2022). *Healthier Firms for a Stronger Recovery: Policies to Support Business and Jobs in Latin America and the Caribbean*. http://dx.doi.org/10.18235/0004398

[29] When companies set up operations in a foreign country and carry out business activities by engaging with diverse local stakeholders, they become known as "transnational" or "multinational" companies.

But what do multilatinas look like? How do they operate? Where do they face challenges? Where can they seize opportunities? A 2022 study by the IDB's Institute for the Integration of Latin America and the Caribbean (INTAL) set out to answer this question through surveys conducted alongside the Interdisciplinary Institute for Political Economy (IIEP) in 15 LAC countries[30]. The surveys, which targeted subsidiaries of multinational and multilatina companies operating in the region, provide insights regarding the motivations, activities, performance, and strategies of these firms. The findings provide a general overview of multilatinas, what motivates them, and how they differ from other multinational firms.

- Multilatinas have an intra-regional pattern of expansion: 88% of subsidiaries are located in Latin America and another 7% in North America. As a result, the trade and employment patterns associated with these firms are also fundamentally regional and though recent investment flows hint at expansion towards other regions. They indicate that multilatinas are uniquely positioned to generate jobs and funnel investment to the region at a time when it is much needed.
- Though all multilatinas surveyed are organized as corporations, only 37% are listed in stock exchanges and less than 5% are listed in the United States. This may indicate that multilatinas still have a way to go in terms of corporate governance, transparency, and management; and that progress on these fronts can facilitate their further expansion and growth.
- Investments made abroad by multilatinas are financed with their own funds in nearly all cases, through credit from private and public banks in their countries of origin are the main source of financing. In contrast, investments by multinationals tend to be financed by reinvesting profits and loans from parent companies, which exclusively control investment decisions. This means that the growth of multilatinas represents an opportunity to expand domestic investment and to deepen engagement with local financial ecosystems.
- 66% of multilatinas export through one or more subsidiaries or the parent company. Across sectors and geographies, big differences are noted: 100% of companies in the primary sector export compared to only 23% of service companies, while subsidiaries in South America export the most (77%). These figures indicate that though multilatinas are engaging in international trade, there is room to further embolden them as exporters in the global arena.
- The primary factor multilatinas consider when investing in the region is legal certainty, followed by access to skilled labor, geographical proximity, existing free trade agreements, and specialized suppliers. This means that governments focused on developing straightforward, transparent legal frameworks, investing in human capital, and improving trade policies can set the groundwork for multilatinas to grow, thereby unlocking important socioeconomic benefits for their countries.
- Around 43% of multilatinas surveyed carry out research and development (R&D) activities. Levels of investment vary greatly by country of origin, with companies from Chile (64%) and Mexico (67%) leading on R&D. This is in stark contrast to the operations of multinational firms, which have little propensity to invest in R&D in the region and are unlikely to engage with universities, research centers, or other actors in the local innovation ecosystem. This means that empowering multilatinas can generate positive spillover effects in the form of innovation.
- Like multinational firms, multilatinas deliver large volumes of goods and services in countries of origin and generate a reasonable degree of satisfaction with their suppliers. This means that multilatinas are well poised to expand their customer base even in the face of competition from multinationals, indicating an opportunity for further growth.

7.3. IndexAmericas: A Tool for Empowering Multilatinas as Agents of Change

Multilatinas are well-positioned to foster business activity, job creation, investment, and growth in the region. But how can we embolden them to be agents of change and corporate citizens that look beyond the bottom-line to ensure they are generating a positive socioeconomic impact in the communities in which they operate?

IDB works through many initiatives to this end, including IndexAmericas, a family of corporate sustainability indexes that evaluate how companies operating in LAC perform along ESG (environmental, social, and corporate governance) lines and contribute to sustainable development. The development component of IndexAmericas uses key performance indicators to assess the performance of these companies, placing special emphasis on companies whose beneficiaries are located in LAC. The index is fully aligned with the United Nations Sustainable Development Goals (SDGs) and is linked to financial products, which in turn enables IndexAmericas to promote sustainable investing in capital markets.

IndexAmericas includes a Multilatinas Index, which was designed to encourage and recognize corporate sustainability behaviors among regional firms. The Multilatinas Index is updated annually and showcases the top 30 LAC-based publicly traded companies using its ESG and development-focused methodology. Since its first iteration in 2017, this index has included firms from Argentina, Chile, Colombia, and Mexico, though 40% of companies reflected are Brazilian given Brazil's status as one of the most dynamic emerging market economies.

One example of a firm highly rated on the index is Bancolombia Group, a leading financial institution that employs around 30,000 people and has operated in Central and South America for more than 146 years. Twenty-five years ago, it became the first

[30] El Instituto para la Integración de América Latina y el Caribe (INTAL) del Banco Interamericano de Desarrollo (2022). *Radiografía de las empresas Multilatinas y las multinacionales de América Latina*. http://dx.doi.org/10.18235/0004188

Colombian firm to be listed on the New York Stock Exchange. And today, it is recognized for its dedication to fostering economic growth and operating sustainably through measures including impact investing and promoting financial inclusion, digitalization, and training alongside partners like IDB Invest, which serves the private sector and IDB Lab, IDB's innovation laboratory. Bancolombia is also innovating in the impact space. For example, its subsidiary Banistmo joined forces with IDB Invest, to launch the region's first-ever gender bond. Deployed in Panama, the bond's revenues are being used to increase access to financing for small and medium-sized enterprises led by women. Bancolombia and IDB Invest also launched the region's first sustainability-linked bond issued by a bank to support social and environmental projects.

Another example is the Brazilian company Natura&Co, which operates in more than 100 countries around the world. A cosmetics and personal care business headquartered in São Paulo, Natura&Co believes in challenging the status quo to promote real economic, social, and environmental impact in line with the SDGs. A relevant milestone achieved by the firm was the successful issuance of a USD1 billion sustainability-linked bond, the largest-ever single issuance of this type by a Brazilian company. Also, during the 2021 United Nations Climate Change Conference, Natura&Co harnessed the COP platform to advocate for preserving the Amazon, launching specific initiatives and establishing specific targets in pursuit of this goal. For example, the company joined forces with MapBiomas, InfoAmazonia, and Hacklab to launch PlenaMata, a unique online tool that monitors deforestation in real time and promotes conservation efforts.

7.4. Homegrown Sustainability Efforts: The Case of Argentina

The IndexAmericas Multilatinas Index is a key tool for promoting sustainability across the region and, specifically, for empowering LAC-based firms to operate sustainably. Yet the IndexAmericas initiative sees great value in more localized efforts to encourage and reward corporate sustainability efforts. That's why in 2018, it set out to work with Argentina's stock exchange Bolsas y Mercados Argentinos (BYMA) to promote sustainability within the Argentina stock market. The initiative helped BYMA publish a non-commercial corporate sustainability index inspired by the IndexAmericas methodology but tailored to the specificities of the Argentine market and focused on a more local sustainability agenda. BYMA's index now recognizes the top 15 corporate sustainability leaders in the Argentine market, gives them regional and global visibility, and showcases their efforts to contribute to the SDGs. Since its creation, the index has positively impacted issuers and investors, raising awareness about the importance of sustainability reporting, adopting better business practices, and aligning firm operations with ESG and development targets. As a result, more local companies today are demonstrating a commitment to ESG and development issues and to communicating about how they perform along these lines.

As an example of the types of firms featured on BYMA's index, consider Pampa Energía – a leading independent energy company in Argentina that uses diverse sources to generate up to 85% of the country's electricity. Pampa Energía runs social projects to bring energy access to underserved communities by promoting renewable energy sources and improving efficiency. One such initiative involved the construction of ecological stoves in Piquirenda, with the goal of serving indigenous peoples with limited energy access who are at risk of social and economic vulnerability. The program, developed in partnership with Solar Inti Foundation, also had a gender component, as it was focused on empowering women and developing skills through workshops.

7.5. Conclusions

Multilatinas are an essential source of employment, innovation, and investment in the region and are uniquely positioned to drive positive change by empowering the region's workforce, working with local suppliers, and positively contributing to the communities in which they operate. As companies continue emerging and expanding throughout the region, sustainability must be a core focus for these firms, one considered essential to business interests.

References

Center for Global Development and Inter-American Development Bank (2022). *Healthier Firms for a Stronger Recovery: Policies to Support Business and Jobs in Latin America and the Caribbean*". http://dx.doi.org/10.18235/0004398

Deloitte (2016), *Becoming a Multilatina: Key factors to regionalizing in Latin America*. https://www2.deloitte.com/us/en/pages/strategy/articles/becoming-a-multilatina-key-factors-to-regionalizing-in-latin-america.html

El Instituto para la Integración de América Latina y el Caribe (INTAL) del Banco Interamericano de Desarrollo (2022). *Radiografía de las empresas Multilatinas y las multinacionales de América Latina*. http://dx.doi.org/10.18235/0004188

Inter-American Development Bank (2022). *Latin American and Caribbean Macroeconomic Report. From Recovery to Renaissance: Turning Crisis into Opportunity*. http://dx.doi.org/10.18235/0004180

Chapter 8

DIGITAL STARTUPS: TOWARDS A MORE SUSTAINABLE ECONOMY IN LATIN AMERICA[31]

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Executive Summary

Sustainability has been a priority in the global political agenda and there is pressure on companies in Latin America to address some of the biggest social and environmental challenges. As a result, the ESG perspective has become a must-have rather than a nice-to-have element of doing business in the region. Among the most dynamic business domains in the region is the local entrepreneurial ecosystem, the value of which has risen to USD 221 billion in 2021. After analyzing the business models of the companies in the investment portfolio of the most prominent venture funds in Latin America we find that there is a significant presence of startups that directly address burning social problems. To a lesser extent there are startups whose business models alleviate environmental pressures, while the governance aspect of the ESG perspective is almost entirely absent.

Keywords: ESG, venture funds, entrepreneurial ecosystem, Latin America

8.1. Introduction

Sustainability has become a priority in the global political agenda and there is a lot of pressure on companies to address some of the biggest social and environmental challenges. Those pressures come from regulators, politicians, and investors alike (Dudok van Heel, 2022, as cited in Bernal, 2022). In Latin America, business leaders have been migrating towards more sustainable business models, among other things, to increase their companies' financial value. In their search for these more sustainable business models, digital tools and digital ventures have become essential. Arguably, technology-based enterprises have an enormous potential for generating social and environmental value while being profitable. For example, the #SMARTer2030 study by the global initiative for sustainability eGlobal e-Sustainability Initiative (GeSI) (CEPAL, 2022) estimated that implementing digital solutions in different sectors of the economy, could reduce the total global emissions of carbon dioxide equivalent (CO_2e) by 12 gigatons (Gt) by 2030, thus, promoting a path towards environmentally sustainable growth. According to the Transactional Track Record (TTR), venture capital investment in Latin America reached 8 billion dollars in 2020 and there have been more than 420 transactions, with 90% of these agglomerated in Brazil, Mexico, Chile, and Colombia. Investment accelerated dramatically in 2021, turning Latin America into the fastest-growing region in the world for venture funding (Crunchbase News, 2022). As broadband infrastructure, internet penetration and social media usage increases rapidly in the region, companies are looking to exploit a long overdue digital transformation. According to Peña (2021), up until 2021, there were 52 startups worth over $500 million in Latin America, all of them digital in nature. However, is the bubbling digital start-up ecosystem in Latin America a driver for a more sustainable economy?

The present chapter examines venture capital investment in Latin America and analyzes whether investments flow to startups with business models aligned with one or several ESG dimensions. First, the chapter outlines the ESG philosophy and criteria and then presents evidence on how venture capital in Latin America has impacted sustainability-focused efforts in the region.

8.2. ESG Reporting: Where are we?

Over the last two decades, there has been a significant increase in both use and publication of non-financial information, specifically regarding sustainability and specific ESG dimensions. Both investors and consumers demand more knowledge of non-financial attributes and exercise pressure on organizations to publish additional data (Chueca, 2021). It has been argued that in Latin America, stakeholders have significant concerns for corporate social commitments and have started seeking and even demanding more knowledge regarding the sustainability profile of companies (Cuzcano, 2021). Using a wide geographical

[31] We are grateful to Paula Cortés, Gabriela Olano and Natalia Jaramillo for excellent research assistance. All remaining errors are ours.

sample, Serafeim (2019) finds that companies that score better in terms of their business impact in the environmental and social domains end up with their shares trading at a premium. As a result of this trend, different ESG indices, which are regularly updated, such as S&P 500 ESG Index and Nasdaq-100 ESG Index, have become increasingly more influential worldwide for investment decisions.

In Latin America specifically, social- and governance-related initiatives appear to have a positive and significant impact on financial performance as per accounting metrics (Correa and Vasquez, 2020). In addition, or a number of Latin American companies, ESG-related initiatives have financial impacts both internally, regarding accounting, and externally, in the market. Beyond reputation building through reporting alongside ESG dimensions, corporate social responsibility impacts arguably translate and are reflected in companies' financial reports. For example, a number of Latin American companies have managed to capitalize on their commitment to non-financial initiatives to spur growth, which incentivizes them to continue their efforts in ESG domains and to report on them (Correa and Vasquez, 2020).

Michael Porter, George Serafeim, and Mark Kramer (2019) highlight that the broadness of ESG reporting encourages investors and consumers, by creating a "feel good" experience, but in the end, it might be distracting companies from imagining and delivering a greater societal impact. A possible caveat occurs when prescribed or expected ESG metrics are not material to the performance of a business in a specific market or industry, and broad ESG reporting does not specifically highlight areas where businesses do, in fact, have a greater impact on society. Arguably, ESG performance at industry level tends to converge with the passing of time, making it hard to claim that ESG can be the basis for a sustainable competitive advantage in the long term. At the same time, diversity in ESG reporting formats has been growing, making meaningful comparisons challenging. According to Sakis Kotsantonis, Chris Pinney, and George Serafeim (2016) data availability and quality are also increasing, and even though ESG data is still lacking in comparison to financial data, it is improving. In essence, the volume of ESG-related information and its complexity is increasing much faster than the decision-makers capacity to analyze it properly.

The framework used for the ESG scoring for this chapter is based on the common metrics and reporting of sustainable value creation proposed by the World Economic Forum (Table 8.1) which not only includes the ESG dimensions, but also the measurements used to construct the core indicators.

Table 8.1. Common Metrics and Consistent Reporting of Sustainable Value Creation by the World Economic Forum

Pillar	Core metrics	Source
Environmental (Planet)	Climate change (Greenhouse gas (GHG) emissions and TCFD implementation)	GRI 305:1-3, TCFD, GHG Protocol; Recommendations of the TCFD; CDSB R01, R02, R03, R04 and R06; SASB 110; Science Based Targets initiative
	Nature loss	GRI 304-1
	Freshwater availability	SASB CG-HP140a.1, WRI Aqueduct water risk atlas tool
Social (People)	Dignity and equality (Diversity and inclusion (%); Pay equality (%); Wage level (%); Risk for incidents of child, forced or compulsory labor)	GRI 405-1b; Adapted from GRI 405-2; GRI 202-1, Adapted from DoddFrank Act, US SEC Regulations; GRI 408-1b, GRI 409-1
	Health and well-being	GRI:2018 403-9a&b, GRI:2018 403-6a
	Skills for the future	GRI 404-1, SASB HC 101-15
Governance	Governing purpose	The British Academy and Colin Mayer, GRI 102-26, Embankment Project for Inclusive Capitalism (EPIC) and others
	Quality of governing body	GRI 102-22, GRI 405-1a, IR 4B
	Stakeholder engagement	GRI 102-21, GRI 102-43, GRI 102-47
	Ethical behavior	GRI 205-2, GRI 205-3
	Risk and opportunity oversight	EPIC, GRI 102-15, World Economic Forum Integrated Corporate Governance, IR 4D

Source: Authors based on the World Economic Forum (2020).

8.3. The New Wave of Technological Startups in Latin America

According to the GEM Report (2021), Latin American countries have some of the highest total early-stage entrepreneurial activity rates. The percentage of adults (aged 18–64) who are starting or running a new business reaches 41.9% in the Dominican Republic, 29.9% in Chile, 28.3% in Guatemala, 21.8% in Panama, and 21% in Brazil for 2021. Propelled by the changing digital environment and junctures such as the pandemic which forced processes to become more digital and flexible, digital entrepreneurship is reaching unprecedented levels to the point where the Latin American startup ecosystem is now dominated by digital startups.

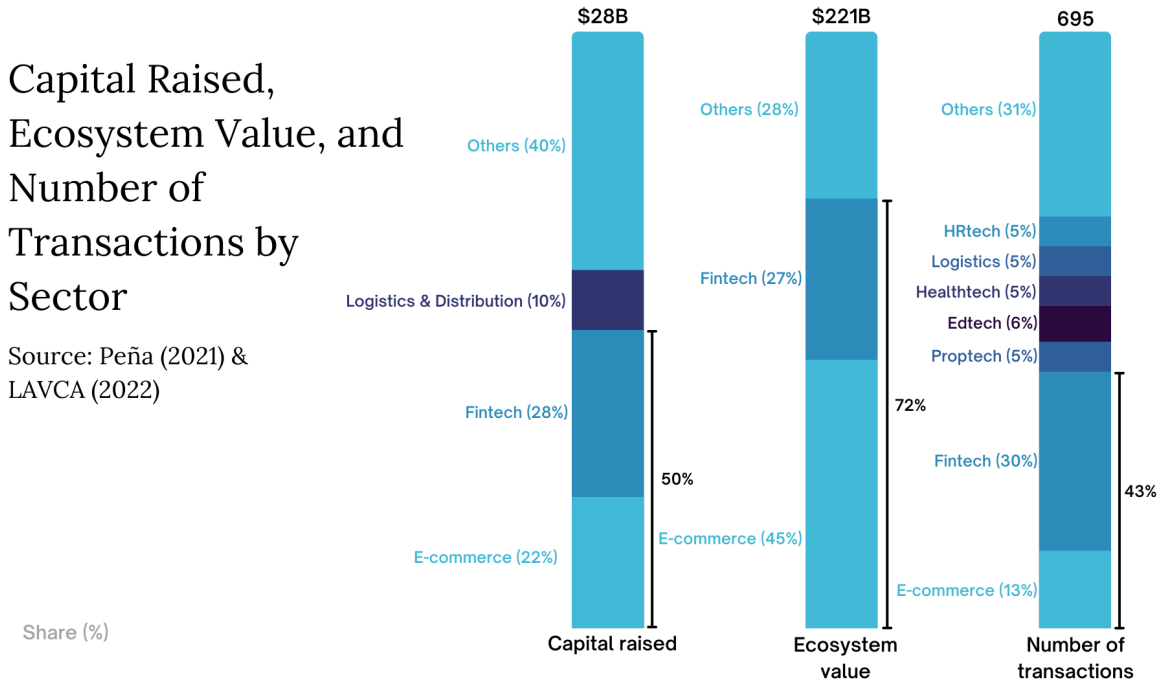
According to Peña (2021), up until 2021, there were 52 startups with valuations over $500 million USD in the region that spread across 16 sectors, all of them digital in nature. The region also passed from having two unicorns in 2015 —privately held startups

valued at over $1 billion dollars— MercadoLibre in Argentina and Decolar in Brazil, to 27 unicorns in 2022 (The Economist, 2022). Peña's study (2021), also advances a very promising outlook for the Latin American startup ecosystem:

> There are over 1,005 technology companies born in the region that raised over $1 million. These companies are collectively worth $221 billion, raised $28 billion, include 28 companies worth more than $1 billion, and have over 245,000 employees. (…) Accelerated growth has been witnessed throughout the broader ecosystem. Its value multiplied by 32 times in the last decade, going from an estimated $7 billion in 2010 to $221 billion in 2020. Most of the growth took place in the past four years. (Peña 2021, pag. 6)

For the case of Latin American digital startups, two sectors are essential: e-commerce and fintech, which concentrate 72% of the ecosystem value, 50% of the capital raised, and 29% of startup activity. The region's fintech industry has taken off in the past five years, doubling in size from 2018 to 2021 (The Wilson Center, 2022a). Opportunities have been massive in this domain due mainly to two factors: On the one hand, as Latin America continues to have a large population of unbanked and under-banked consumers, the region represents a giant market with enormous room for financial growth and advancement. On the other hand, e-commerce experienced an exponential growth propelled by the mobility restrictions that resulted from the COVID-19 pandemic. This has created a strain on disproportionately cash-based economies, which called for the development of online financial services and trade mechanisms (See Figure 8.1).

Figure 8.1. Capital Raised, Ecosystem Value, and Number of Transactions by Sector in Latin America

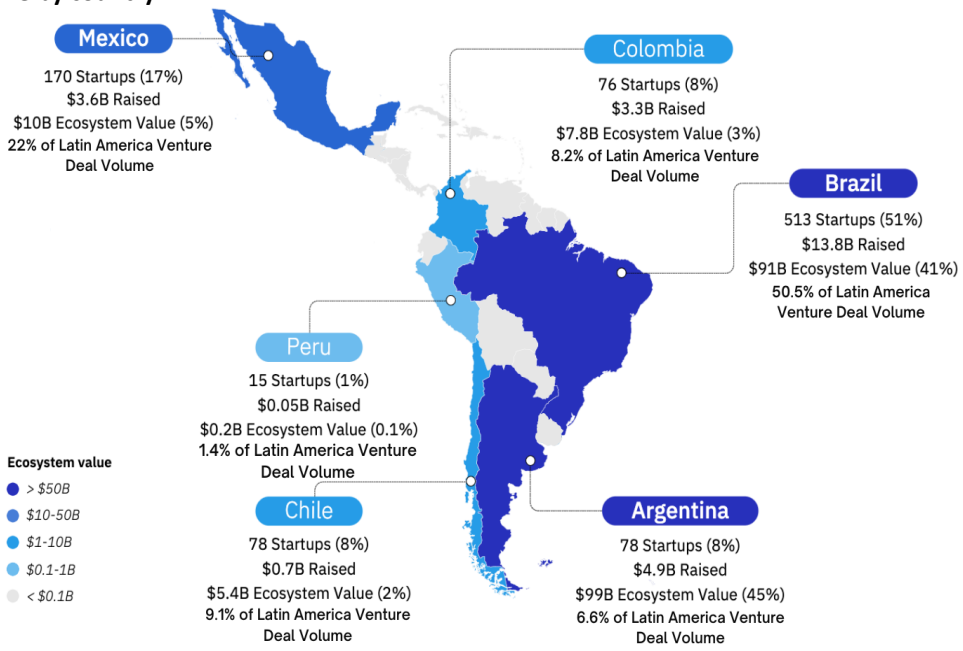


Source: The authors based on Peña (2021) and LAVCA (2022)

However, the development of national start-up ecosystems is not homogeneous throughout the region. The countries with the best performance in terms of startup emergence and venture deal volume are Brazil, Mexico, Argentina, Chile, and Colombia. These countries have seen the emergence of 513, 170, 78, 78 and 76 startups, respectively, that have raised more than $1 million in capital (Peña, 2021). Moreover, these same countries host Latin America's most dynamic entrepreneurial hubs: São Paulo, Mexico City, Bogotá, Buenos Aires, and Santiago-Valparaiso. São Paulo, with an estimated ecosystem value of around $49 billion, is the only Latin American hub to be included in the Top 30 Global Startup Ecosystem Ranking. Sao Paulo's success as the most thriving Latin American startup ecosystem responds to the significant support by the Brazilian government, which runs over 20 initiatives aimed at developing the country's startup scene, as well as the city's financial development, which translates into many financing opportunities for startups. Mexico City comes as a distant second with an estimated ecosystem value of 22 billion, followed by Bogotá with $4.7 billion, Buenos Aires with $1.7 billion, and Santiago-Valparaiso with 661 million (see Figure 8.2).

Figure 8.2. Number of startups, percentage participation in the regional ecosystem, capital raised, ecosystem value and share of Latin American venture deal volume by country

Source: Peña (2021) & LAVCA (2022)



Source: The authors based on LAVCA (2022) and Peña (2021)

The development of digital startups is largely due to the advances in Latin America's digital ecosystem. According to Katz (2015), a digital ecosystem can be defined as "the set of infrastructures and services associated with the provision of content and services through the Internet." (Pag18). During the past decades, the region has advanced significantly in terms of digitization metrics, such as the deployment of broadband infrastructure, and the adoption of the Internet and social media. Regional internet access has doubled since 2010, and by 2020, there were around 1964 secure internet servers per million people, 74 percent of the population was using the Internet, and about 82% of the population had access to social networks (The Wilson Center, 2022b) (World Bank, 2020a, 2020b) (ComScore, 2021). Moreover, citizens have been increasingly acquiring smart devices that allow better connectivity: In Latin America, the smartphone market is the fastest growing compared to the other regions of the world, accelerated by cheaper smartphone devices from China that have allowed lower socioeconomic strata to participate in the digital economy (Garcia & Malagon, 2020). The growth in the digitization of consumption, understood as the adoption of digital networks, products, and services by individual consumers, has allowed enterprises to access business opportunities that were previously difficult to reach because of the institutional and infrastructure voids that characterize the region.

However, as stated by Katz & Callorda (2018), the development of the digital economy in the Latin America and the Caribbean region still faces great challenges. Firstly, the digital divide remains an important feature of the region's Internet landscape: according to the Wilson Center (2021) only 45.5 percent of Latin American households have broadband access, and the average gap in internet usage between the top and bottom quintile of earners is about 40 percent. Other than income barriers, the broadband gap is also the result of a lack of digital literacy, lack of cultural relevance and interest (Katz & Callorda, 2018). Even when these barriers are overcome, internet users have many concerns, including privacy-related ones. As cybercrimes have increased over time, online activities by users are cautious, and in return companies' business opportunities are limited, truncating further their available resources that can be invested in improving cyber security. Moreover, the digitization of production, understood as the assimilation of digital technologies by enterprises, is still lagging, thus restraining productivity levels. Additionally, aggregate telecommunications capital spending is low compared to other regions and, thus, not sufficient to build the last generation of infrastructure, in particular fiber optics. As a result, Latin America and the Caribbean is positioned at an intermediate level of digital ecosystem development with respect to other regions in the world. According to the Digital Ecosystem Development Index of the Development Bank of Latin America (CAF), with an index of 49.925 (on a scale of 0 to 100), the region is more advanced in this respect than Africa and Asia-Pacific (Advisory Services LLC, 2017) but still lags behind Western Europe, North America, Eastern Europe, and the Middle East.

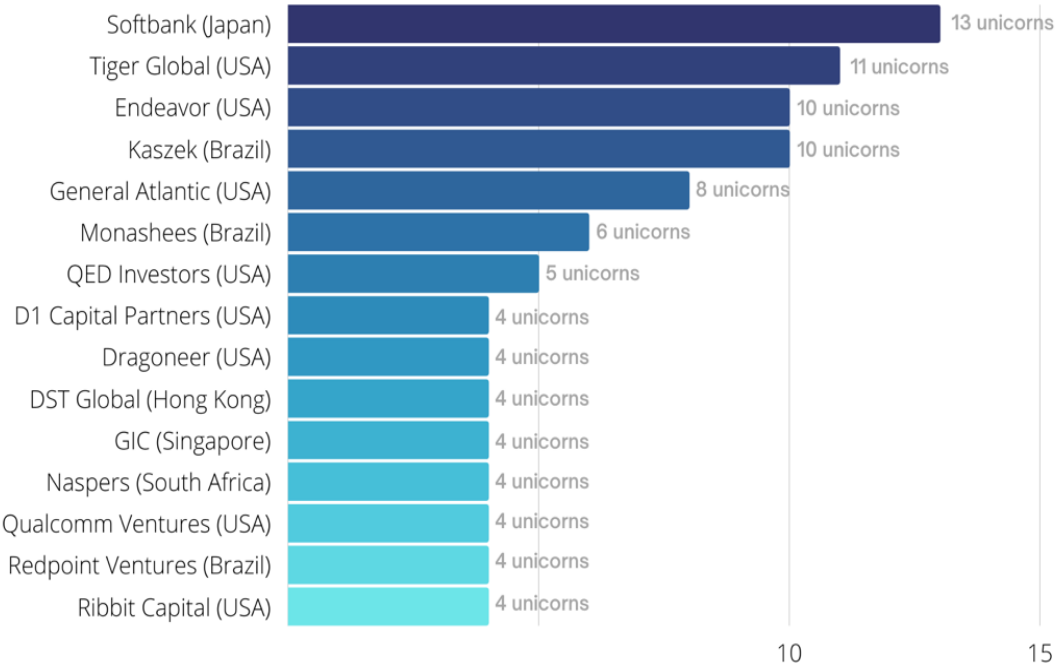
Moreover, government support is limited in most of the region's countries. According to Bai, Bernstein, Dev, and Lerner (2021), over the past decade, governments have increased their spending on venture capital financing programs. However, even though public start-up programs have been key for the development of startup ecosystems in countries such as Chile, Brazil, Peru, and Colombia, for Latin America as a whole, the average share of government budget allocation for startups as a percentage of GDP is lower than it is for other regions. This evidence is consistent with the region's slow-growing productivity rates and stalling levels of investment in R&D.

8.4. ESG and Venture Capital Investments in Latin America

In parallel, venture capital in Latin America has seen unprecedented growth. From 2016 to 2018, venture investment in the region increased nearly four times, and from 2018 to 2019, the increase was twofold. More recently, in 2021 over $20 billion USD of venture capital went into 952 deals, nearly four times as much as in 2019 (The Economist, 2022). Historically, the appetite for investment in the venture capital industry in Latin America was limited, which, according to Capria (2021), was the result of the risk averse nature of the traditional investors (see Figure 8.3). Even though it remains a challenge, since 2005, venture capital investment in the region has been growing by an average of more than 30% per year. According to Stein and Wagner's (2018), venture capital investments in Latin America and the Caribbean tend to be larger, focus less on high-technology industries and are more likely to be funded from abroad than those in benchmark regions.

In particular, impact investing has grown both locally and globally. Until 2017, total assets under management allocated to impact investing in Latin America were estimated at US$4.7 billion according to The Association of Private Capital Investment in Latin America (LAVCA). Microfinance and agriculture were the largest sectors for investment, together representing over 75% of the total capital deployed in the region. The tech sector has also become a key area of focus, specifically, the fintech sector.

Figure 8.3. Top 15 Biggest Investors in Latin American Unicorns



Source: The authors based on Pompeo (2021)

Investing with an impact focus does not occur through dedicated impact funds only. Most venture capital funds include in their portfolios startup ventures that have an impact on one or more ESG dimensions. Table 8.2 shows the classification we performed using the ESG dimensions of the venture companies that belong to some of the most prominent Latin American and global investment funds portfolios. To illustrate the current link between the startup scene and the ESG philosophy, both in Latin America and globally, we relied on the classification of ESG dimensions presented in Table 8.1 and highlighted the ventures where such a connection is part of their value creation model.

As most Latin American startups base their success on filling in market voids in the region and attending underserved communities, the social dimension is prominent across startup ventures from the region. Some startups embrace the environmental dimension as they focus on clean energy alternatives or sustainable agriculture, while the governance dimension is much less evident as a value creation aspect in the Latin American entrepreneurial scene.

Table 8.2. Venture Investment in Latin America with ESG Focus

	Fund	Origin	Investment Destination	Sectors	Portfolio Highlights	ESG
Latin American Funds	ALLVP	Mexico	Latin America	Seed Rounds and Series A of startups in the Healthcare, Fintech, Consumer Internet, and Smart Cities & Mobility sectors.	Alkanza, Cornershop, Weex, Nuvocargo	Social.
	Angel Ventures Mexico	Mexico	Latin America	Invests in startups from the countries of the Pacific Alliance, in the Consumer and Retail, Technology, Media, Health and Biotechnology, Agriculture, and Fintech sectors.	Kueski, Bayoneta	Social.
	Dalus Capital	International	Latin America	Four themes: inclusion, business productivity, digital consumer, and climate innovation.	Clip, Revelo, Sirena, Energryn	Social, Environmental.
	DILA Capital	Mexico	Latin America	Investment is in Seed Rounds and Series A.	Crehana, Kushki, Urbvan	-
	IGNIA	Mexico	Mexico	Sectors such as Fintech, Media, Education, Health, SaaS, among others.	Credijusto, Kinedu, UnDosTres, Apli	Social.
	Wollef	Mexico	Latin America	Invests tickets between US$500,000 and US$1.5 million in first Seed Rounds and Series A checks. The companies have to operate in Mexico or, at least, in two Latin American countries.	Konfio, Nubank, Conekta, Loft	-
	Mountain Nazca	Mexico	Latin America	It's investment focus is on Seed Rounds and Series A.	Kavak, Albo, Luuna	-
	Promotora Social Mexico	Mexico	Mexico	Venture Philanthropy and Impact investing organization that invests in scalable business models capable of reaching Mexico's base-of-pyramid population.	Kinedu, LAB4U, Tandem	Social.
	VARIV	Mexico	Latin America	Mainly in seed-stage startups in Latin America.	Kueski, Conekta, YoTePresto	-
	ArkFund	Mexico	International	Pre-seed and seed stage that invests tickets of USD $50 thousand, mainly in the Fintech, Consumer, Health, Edtech, and Enterprise Software sectors.	Albo, Alana, Baubap, Vexi	-
	Amplifica Capital	Mexico	Latin America	Invests in companies that generate a positive impact on the lives of women, seeking to increase their opportunities and their inclusion in the economy.	Agtools, Clupp, Encantos	Social.
	Avalancha Ventures	Mexico	Latin America	Invests in early stages with a first ticket of USD $50 thousand and can follow on up to USD $500 thousand.	Unima, Atexto, Rebus	-
	Balero	Mexico	Latin America	Invests tickets of between USD $75 and 125 thousand, mainly in Health, Education and Entertainment.	Pathbooks, Qapla, Thincrs	Social.
	Acumen LatAm Capital Partners (ALCP)	Colombia	Latin America	Impact investment, focused on early growth stages. Its investment focus is on companies that have a high social impact, in sectors such as agribusiness, education or energy in Colombia, Peru, and Central America.	SunColombia, Crehana, Levee	Social, Environmental.
	Ewa Capital	Colombia	Latin America	Stands out for being a venture capital fund led exclusively by women. Its investment focus is on education, health, financial services, and retail.	Platzi, Merqueo, 1DOC3	Social.
	InQlab	Colombia	Latin America	Invests in seed stage and Series A, tickets on average of USD $300 thousand. It is agnostic in the sector, but wants startups to have a part of their operation or market in Colombia.	Lentesplus, Laika, Mesfix	-
	Magma Partners	Chile	International	Besides Chile, they are present in Colombia, Mexico, the United States, and China	Truora, Omnibank	-
	Velum Inverlink	Colombia	International	Seed stage investors in Latin America.	OFI, Hogaru, Merqueo	-
	Ventura	Colombia	Latin America	Single family office with an extensive venture capital portfolio based in Colombia with investments in Latin America, Central America, and Mexico.	Rappi, Truora, Vueltap	-
	FCP Innovacion	Colombia	Latin America	Focus on companies and projects with a high content of science, technology, and innovation applied to the public services sector.	Puntos Leal, Choice, Playvox	Environment.
	Ataria Ventures	Peru	International	Invests in startups in early stages (Seed, Series A and Series B) and has an average investment ticket of USD $500 thousand.	Runa, Chiper, GoTrendier, Ayenda	-
International Funds	Wayra	Spain	Europe, USA, Mexico, Colombia, Argentina, Brazil, Chile	Artificial Intelligence & Big Data, Fintech, Software, SaaS, Digital Marketing (In general, it invests in sectors that complement the communications business ecosystem).	Crehana, ePayco, Monkey, deepSight, Flywire, Vu	Social (with some investments in Ed Tech, e-Health, and Fintech)
	Y Combinator	United States	Global	Agnostic. Invest in all types of sectors in Pre-Seed rounds.	Airbnb, Dropbox, Reddit, Rappi, Frubana, Kovi, Mono, Fondeadora.	Social, Environmental, Governance. It invests in various non-profit organizations and companies with a focus on social inclusion.
	Andreseen	United	Global	Bio + Health, Crypto, Consumer,	Facebook, Pinterest, Lyft,	-

	Fund	Origin	Investment Destination	Sectors	Portfolio Highlights	ESG
	Horowitz	States		Enterprise.	Buzzfeed, Cider, Dapper, Rappi, Loft, Addi, Foodology,	
	SoftBank Latin America Fund	Japan	Latin America. (SoftBank invests globally but this fund focuses specifically on Latin America)	Technology.	Loggi, Rappi, Konfio, Frubana, Medway, Tribal Credit, TerraMagna,Tul.	Social (with some investments in Ed Tech, e-Health, and Fintech with an emphasis on inclusion).
	FJ Labs	United States	Global (with greater emphasis on North America and Europe)	Marketplaces, Consumer.	Alibaba, Klarna, Loft, Frubana, Habi, DeRemate.	-
	Sequoia Capital	United States	Global	Artificial Intelligence & Machine Learning, Consumer, Crypto, Enterprise, Fintech, Healthcare.	Zoom, DoorDash, Okta, Qualtrics, Snowflake, Nubank, Despegar.	Social, Governance. (Some investments, especially Fintech, aim for inclusion).
	Endeavor Catalyst	United States	Global	Agnostic. Invest in all types of sectors in Pre-Seed rounds.	Creditas, Rappi, NotCo, Loft, Globant, Ebanx, Cabify, Glovo, Bitso.	Environmental (with some investments in clean energy generation), Social (with some investments in e-Health, financing, and education).
	500 StartUps Latam	United States	Latin America. (500 StartUps invests globally but this fund focuses specifically on Latin America)	Technology (Fintech & Insurtech, SME Solutions, Ecommerce & Marketplace, Education, Tourism, Logistics & Mobility, Proptech, Health & Wellness, HR).	Konfio, Platzi, 99Minutos, Ayenda, Conekta, Talently, Clip, Aprende Institute,	Social (with some investments in Ed-Tech, health, and Fintech)
	Quona Capital	United States	Emerging markets (Latin America, Africa, Middle East, Southeast Asia)	Fintech.	Addi, Konfio, Monkey, Klar, Creditas,	Social (with various impact investments for SMEs and low-income populations).
	Broadhaven Capital Partners	United States	Global	Financial services.	Nocnoc, Nowports, Mendel, Spenmo, Kovi.	-
	QED Investors	United States	Global	Fintech.	Nubank, Morado, Bitso, Konfio, Melonn.	Social (with various impact investments for SMEs and low-income populations).
	Acrew Capital	United States	Global	Fintech.	La Haus, Klar, BlockFi, Coinbase, Papaya, Stem.	-
	Foundation Capital	United States	America	Enterprise, Fintech, Consumer, Crypto.	Platzi, Addi, Rappi, Justo, Chegg, Netflix,	-
	NFX	United States	Global	Bio, Web3, Gaming, Proptech, Space, Fintech, Marketplaces.	La Haus, Latitud, Melonn, Trulia, Renegade, Doordash, Lyft, Zubale, Nuvocargo,	-
	Acumen Latam Partners	United States	America, India, Pakistan, Africa.	Impact (Agriculture, Education, Energy, Financial Inclusion, Health, Home, Sanitation, Workforce Development).	Crehana, Azahar Coffee, Acceso Colombia, Esusu, Cacao de Colombia, Inclusively.	Social, Environmental, Governance. (All investments are intended to benefit low-income communities).
	Outbound Ventures	United States	America	Technology, Consumer.	Fitco, Treinta, Laika, Rebel, Fortú.	-

Source: Authors

8.5. Concluding Remarks

Latin America's economic scene has been traditionally characterized by institutional voids and underserved communities. As such, ESG-focused business activity has gone beyond being a matter of social responsibility, to become a profitable business opportunity that attracts both local and international investors. Many new ventures, mostly digital in nature, have included sustainability as a dimension of their business as they explore new technological solutions to long-standing structural problems of inequality, institutional voids, and infrastructure absence. Taking advantage of an increasingly favorable digital environment, entrepreneurs have found increasing opportunities to create economic value by offering financial, agricultural, commercial, educational, among other solutions to markets that were previously difficult or even impossible to reach. Investors have become rapidly aware of these opportunities and as a result many venture capital portfolios in Latin America include startups that have an evident value creation aspect on the environmental, social, or governance sphere. For example, as Fintech becomes one of the best performing sectors in the region and one of the most attractive for investors, most portfolios include startups with an explicit mission of attending the needs of underbanked and unbanked communities. Similarly, as the region remains highly dependent on the primary sector of the economy, investors have become interested in startups with a mission to work towards a more environmentally friendly agriculture or clean energy sources.

The development of the entrepreneurial ecosystem in Latin America seems to drive the creation of more sustainable business models aligned with the ESG orientation. However, some questions regarding the relationship between digitalization and sustainability remain open and should be carefully studied. On the one hand, as digital startups offer automated and algorithm-based solutions, it is important to consider whether the digitization process is disrupting social peace and wellbeing as it negatively affects aspects such as job creation, wage increases, inequality, health, resource allocation, and privacy. In addition, even though many startups focus on reducing negative environmental externalities, it should also be recognized that greater digital development is associated with energy consumption (e.g., data centers), polluting hardware production processes, and business models that encourage the replacement of devices with short life-cycles, aspects that frequently remain outside the

scope of ESG reporting. Likewise, ethical aspects related to data usage, on which most digital business models rely, are posing some crucial questions about the rights of the individual in the digital world. In essence, despite the desirability of ESG-focused business models and the investor enthusiasm about them in the Latin American startup scene, digital ventures expose the need to rethink the ESG perspective and the associated metrics from a less instrumentalist and a more systemic angle.

References

Advisory Services LLC (2017). Hacia la transformación digital de América Latina y el Caribe: El Observatorio CAF del Ecosistema Digital. Caracas: CAF. Retrieved from http://scioteca.caf.com/handle/123456789/1059

Andonova, V., García, J. (2020) An Analysis on Latin American ESG Implementation. *EMI Report 2021*, 99-106.

Bai, J., Bernstein, S., Dev, A., Lerner, J. (2021). The Dance Between Government and Private Investors: Public Entrepreneurial Finance around the Globe. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3834040

Bernal Marin, I. (May 16 of 2022). "Las empresas acaparan más mercado si son más sostenibles que sus competidores." La República. Retrieved from https://www.larepublica.co/empresas/las-empresas-acaparan-mas-mercado-si-son-mas-sostenibles-que-sus-competidores-3363640

Capria (2021). A story of resilience: How has the LatAm Venture Capital ecosystem grown?. Retrieved from https://capria.vc/a-story-of-resilience-how-has-the-latam-venture-capital-ecosystem-grown/

Casanova, L., Miroux, A. (2020) ESG and Emerging Market Multinationals. *EMI Report 2021*, 36-46.

Chueca, C., & Ferruz, L. (2021). Fintech and Sustainability: Do They Affect Each Other?. *Sustainability 2021*, 13, 7012.

Comisión Económica para América Latina y el Caribe (CEPAL), Tecnologías digitales para un nuevo futuro (LC/TS.2021/43), Santiago, 2021. Retrieved from https://repositorio.cepal.org/bitstream/handle/11362/46816/1/S2000961_es.pdf

Correa, J., & Vasquez, L. (2020). Desempeño ambiental, social y de gobierno (ASG): incidencia en el desempeño financiero en el contexto latinoamericano. *Revista Facultad de Ciencias Económicas*, 67-83.

Cuzcano, G. (2021, july 21). La importancia de la sostenibilidad corporativa sobre el valor de la firma en compañías de economías emergentes en América Latina. Lima, Perú.

Garcia, A.M., Malagón, E. (2021). Avances en la economía del ecosistema digital en algunos países de América Latina. *Horizontes empresariales*, 20(1), 4-29.

GEM (Global Entrepreneurship Monitor) (2022). Global Entrepreneurship Monitor 2021/2022 Global Report: Opportunity Amid Disruption. London: GEM.

Glasner, J. (January 21, 2022). *Here's What's Driving Latin America's Rank As The World's Fastest-Growing Region For Venture Funding*. Crunchbase News. https://news.crunchbase.com/startups/latin-america-venture-growth-startups-2021-monthly-recap/#:%7E:text=Latin%20America%20was%20the%20fastest,for%20the%20six%20largest%20geographies.

Katz, R. (2015). El ecosistema y la economía digital en América Latina. Madrid: Fundación Telefónica.

Katz, R., Callorda, F. (2018). Accelerating the development of Latin American digital ecosystem and implications for broadband policy. *Telecommunications Policy*, 42, 661-681.

Kotsantonis, S., Pinney, C., & Serafeim, G. (2016). ESG Integration in Investment Management: Myths and Realities. *Journal of Applied Corporate Finance*, 10-16.

Peña, I. (2021). Tecnolatinas. The LAC Startup Ecosystem Comes of Age. *Inter-American Development Bank*.

Porter, M., Serafeim, G., & Kramer, M. (2019). Where ESG Fails. *Institutional Investor*.

Pompeo, C. (2021). Latin America goes from 2 to 34 unicorns in four years, says Sling Hub. 2021, from LABS website: https://labsnews.com/en/articles/business/latin-america-goes-from-2-to-34-unicorns-in-four-years-says-sling-hub/

Startup Genome (s.f.). Explore the Global Map of Innovation. Retrieved from https://startupgenome.com/ecosystems

Stein, E.H., Wager, R.A. (2019). The development of venture capital in Latin America and the Caribbean: a comparative perspective. *CEPAL Review,* 128.

The Association of Private Capital Investment in Latin America (LAVCA) (2018). Impact + Tech/VC Investing. Latin America Snapshot. Retrieved from https://lavca.org/esg-impact/impact-investing-landscape-latin-america/

The Association of Private Capital Investment in Latin America (LAVCA) (2022). 2022 LAVCA Trends in Tech. Retrieved from https://lavca.org/industry-data/2022-lavca-trends-in-tech/

The Economist. (January 17, 2022). The pandemic has accelerated Latin America's startup boom. https://www.economist.com/the-americas/2022/01/15/the-pandemic-has-accelerated-latin-americas-startup-boom

The Wilson Center. (2021, 10 mayo). Latin America's Digital Divide: Overcoming Persistent Gaps. Wilson Center. https://www.wilsoncenter.org/event/latin-americas-digital-divide-overcoming-persistent-gaps

The Wilson Center. (2022a, may 25). Going Digital: The Promise of Fintech in Latin America. Wilson Center. https://www.wilsoncenter.org/event/going-digital-promise-fintech-latin-america

The Wilson Center. (2022b). Going Digital in Latin America. Wilson Center. https://www.wilsoncenter.org/article/going-digital-latin-america

Vega, F. (2021). El Estado de Social Media en América Latina. Comscore, Inc. https://www.comscore.com/Insights/Presentations-and-Whitepapers/2021/El-Estado-de-Social-Media-en-America-Latina

Wood, S (2018). "Nubank raises US$150M, becomes Brazil's third unicorn." LatamList. https://latamlist.com/nubank-raises-us150m-becomes-brazils-third-unicorn/

World Bank. (2020a). Secure Internet servers (per 1 million people) - Latin America & Caribbean Data. World Bank. https://data.worldbank.org/indicator/IT.NET.SECR.P6?locations=ZJ

World Bank. (2020b). Individuals using the Internet (% of population) - Latin America & Caribbean Data. https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=ZJ

World Economic Forum. (2020). Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation. World Economic Forum. https://www3.weforum.org/docs/WEF_IBC_Measuring_Stakeholder_Capitalism_Report_2020.pdf

Chapter 9
THE 'GREAT RESET' OF GLOBAL VALUE CHAINS

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Executive Summary

Political forces are having an increasingly transformational effect on Global Value Chains. The impact of the Covid-19 pandemic followed shortly afterwards by Russia's invasion of Ukraine has clearly demonstrated the political ramifications of failing supply chain and logistics systems. During this time, governments of all persuasions have adopted a far more interventionist approach to ensure higher levels of supply chain resilience.

Indeed, the origin of the process of change can be traced back over a decade. The Great Recession of 2008 resulted in the disruption to flows of finance, the pivot of many emerging economies to an increasingly assertive China and a heightened awareness of risk at Board level. More recently security concerns over China's use of advanced technologies for military purposes and tensions over Taiwan, have led the US to promote the concept of 'ally sourcing' which could lead to the bifurcation of global supply chains along political lines. There is little doubt that Global Value Chains will need to evolve to reflect these societal, economic and geo-political forces within an increasingly complex market landscape.

Although geo-political considerations have always played a role in international trade relations, it would be fair to say that decades of liberalisation, including the removal of many tariffs and non-tariff barriers, have enabled Global Value Chains (GVCs) to develop on the basis of economic rather than political imperatives. This is no longer the case. Following the Great Recession of 2008, politicians in both emerging and Western markets began to challenge the mantra of globalization due not least to its effect on workers; the environment; inequitable flows of finance; heightened risk and its role in facilitating China's economic and military rise. This meant that even before the systemic disruption of supply chains caused by the Covid-19 pandemic, governments right across the political spectrum had already started to embrace protectionism whilst promoting national industrial strategies such as re-shoring.

This chapter seeks to address the reasons why GVCs are already undergoing a transformation and the role that politics will play in shaping the supply chain structures of the future.

Keywords: Global Value Chains; Globalization; Risk mitigation; Supply chain disruption; Great Reset; Ally sourcing; Re-shoring; Near-sourcing

9.1. How Covid Transformed the Political Perception of Supply Chains

The COVID-19 pandemic has had profound consequences for GVCs which will be felt for years to come. The focus of many governments and business leaders has inevitably been on navigating the short term economic and societal implications of the crisis. However, from the outset there have been other organisations, most notably the World Economic Forum (WEF), who believed the pandemic could be a catalyst for re-structuring the entire functioning of the global economy and with it, inevitably, 'globalization'. According to the WEF, the pandemic offers an opportunity to 'improve' the economic system and replace it with 'responsible capitalism' (WEF, 2020). The aspiration has three main themes:

1. The encouragement of stakeholder capitalism i.e., a system which delivers 'fairer' outcomes
2. Underpinning economic development with sustainability and
3. Harnessing the innovations of the Fourth Industrial Revolution (4IR).

One commentator described the initiative as refocusing the world's economy on 'values' rather than 'value creation'. A number of world leaders and former politicians have embraced the concept - the slogan 'Build Back Better' was adopted by many, including former UK Prime Minister, Boris Johnson, and US President, Joe Biden, to communicate their political aims which directly or indirectly have been influenced by the thinking behind the so-called 'Great Reset'.

This theme is under-pinned by the belief that global economic, financial and trading systems need improvement or, in some cases, complete reform. In fact, many people believe that 'globalization' is no longer fit for purpose, citing a diverse range of short term and structural failings including:

- Misfiring logistics systems such as the backlog of ships at US ports and the high levels of air and sea freight rates
- The way in which many emerging markets were effectively excluded from global supply chains at the height of Covid-19 when shipping capacity was switched to more lucrative trade lanes
- The inability to supply Personal Protective Equipment (PPE) to healthcare workers at critical periods of the pandemic
- Inequitable access to Covid vaccines across the world
- The difficulties which many small and medium-sized exporters in Asia, Latin America and Africa have found in accessing trade finance
- Trade barriers which prevent emerging market companies accessing Western markets
- Structural unemployment created by offshoring of manufacturing jobs from the West to Asia
- The use and misuse of low-cost labor including ethnic groups such as the Uighurs in China
- The role which international logistics and transport plays in the generation of carbon emissions.

Although Covid-19 has raised awareness of the systemic vulnerabilities of globalized supply chains, the decline of globalization may be traced back to the Great Recession of 2008-9. In the aftermath of the crisis, trade was seriously impacted, and global flows of finance dried up, with many markets in the emerging world hit the hardest.

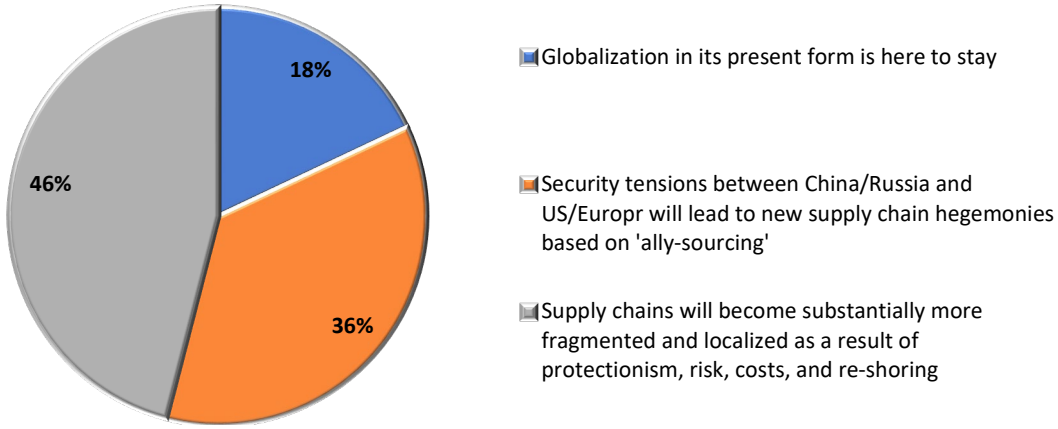
During the 1990s and for most of the 2000s trade volumes grew at a rate which was roughly double that of GDP. However, from the time of the economic recession in 2008, the ratio between GDP and trade growth was replaced with one of direct parity: 1:1 or less. In 2019, before the period of intense volatility caused by the pandemic, global GDP growth was 2.5% whilst trade volumes had decreased by 0.1%.

This changing dynamic has been caused by a number of reasons including:

- Trade tensions and protectionism (most recently demonstrated by the US-China trade war)
- A reduction in import demand due to economic downturn in developed countries
- A rebalancing of risk from far-sourcing to near-sourcing and re-shoring policies
- Decreasing wage differentials between developed and developing markets
- Changing investment priorities of countries which have focused on stimulating the domestic economy and infrastructure rather than exports and
- The reduction in one off gains from offshoring.

Research jointly conducted in June 2022 by market research organization, Ti Insight and the Foundation for Future Supply Chain (FFSC), confirmed that globalization is no longer regarded as the pre-eminent economic force it once was. Findings revealed that the overwhelming majority of the senior logistics and supply chain executives in the survey believed that a major transformation of supply chains was already under way. Just 18% of 129 executives agreed with the statement 'globalization in its present form is here to stay' whilst over a third (36%) agreed that 'Security tensions between China/Russia and US/Europe will lead to new supply chain hegemonies based on 'ally-sourcing'. Nearly half (46%) thought that 'Supply chains will become substantially more fragmented and localized as a result of protectionism, risk, costs and re-shoring'.

Figure 9.1. Survey of industry executive opinion on the future of global supply chains



Source: Transport Intelligence/Foundation for Future Supply Chain

These points will be discussed in more detail later in this chapter.

9.2. GVCs Under Pressure from All Sides

One of the key accusations levelled at globalization is that it has fostered a world of 'haves' and 'have nots'; the characterization that millions of people work long hours for meagre pay in dangerous conditions to supply voracious Western markets. Disasters such as the Rana Plaza factory collapse in 2011, in which over 1000 Bangladeshi textile workers died, have helped reinforce this belief. Despite protestations from organizations such as the World Bank that globalization has helped to raise over a billion people out of poverty, such events have created an overwhelmingly negative public perception of its 'unfair' consequences.

Whilst Multinational Corporations (MNCs) have long struggled with these negative ethical and environmental brand issues in emerging countries, in recent years their economic and societal impact in Western markets has also been called into question by governments which had previously been their strongest proponents. For example, some governments - such as in the United States during President Trump's administration - have challenged the inevitability of the migration of Western manufacturing jobs to Asian or Mexican markets. Whilst consumers in North America and Europe have benefited from the lower prices that have resulted from off-shoring production, it is undoubtedly the case that many workers have lost their livelihoods, with their jobs transferred to often highly subsidized and/or state-backed competitors on the other side of the world. -

Indeed, in many cases, 'global free markets' have turned out to be anything but. MNCs have often benefited from being able to tap into these subsidies, either directly from setting up their own offshored operations, or indirectly through a lower cost supply base. Instead of educating and training unemployed European and US workers to take advantage of a shift towards high value manufacturing or services, Western governments have often allowed the conditions to develop where parts of society, especially in previously industrialized regions, have rejected the established political system. In the minds of many, governments and multinationals have conspired in this decline, a situation only recently being addressed by so-called 'levelling up' policies.

9.3. The Rise Of 'Sino-Centric' Value Chains

What's more, in terms of international relations, supporters of globalization have been accused of unwittingly facilitating the rise of China's soft power. Years of offshoring have left the West at a competitive disadvantage in terms of production facilities and know how. Moreover, China's investment in Africa and Latin America has allowed it access, sometimes exclusively, to raw materials, many of which are critical to future manufacturing strategies such as alternative propulsion technologies. In some cases, Chinese tech companies, such as Huawei, have achieved market leading positions in the supply of electronic components, raising security fears over the potential for hostile intelligence agencies to gain access and compromise information and communication networks (a point discussed further below).

Running counter to much of the rest of the world, China's private sector has become increasingly under state control or influence over the past ten years. As economist Thomas Cullen says in a recent analysis for Ti Insight, 'These organizations [i.e., Chinese privately owned companies] have been characterized by a strategic marketing policy of gaining market-share through undercutting the prices of competitors in the short-term. This has been facilitated by access to capital resources from the state banking system and other state-controlled resources such as land and energy (Cullen, 2022).'

This has resulted in the growth of Chinese-based global brands, such as ChemChina, Haier, Lenovo, Geely and, of course, Huawei. Many of these companies started off as suppliers to Western OEMs but have developed their own brands and invested heavily in their own technology. In doing so they have migrated up the value chain, from competing on cost to quality.

Their ambitious strategies have set alarm bells ringing in the West. Big acquisitions, such as ChemChina's purchase of Swiss-giant Syngenta, have fueled fear of a transfer of intellectual property to China. Again, critics would say, globalization has been hijacked by Chinese-backed corporations working to their own strategic or even political ends.

In the long run this will be counter productive. According to Cullen:

- Countries that perceive certain industries as 'strategic' will seek to avoid dependence on Chinese suppliers in those sectors.
- Companies will seek to construct supply chains that rely on suppliers which are politically stable and reliable.
- Investment in assembly operations for servicing markets outside China will be less likely to be located in China.
- Assembly operations in China will increasingly be dedicated to supplying the Chinese market.

A further pillar of Chinese government policy has been the 'capture' of supply chain value by increasing the domestically sourced proportion of intermediate goods. In the 'Factory Asia' model, components produced across the region have typically been transported to China for final assembly. This means that Chinese manufacturers lose out on much of the value adding process, the final assembly being a low cost and commoditized undertaking dependent on cheap labour. The government recognized that for its industry to ascend the value chain it had to invest in the know-how and facilities which would obviate the need to import components from competitors throughout the region – a calculated, strategic and successful move.

According to the OECD, 70% of international trade is destined for production in Global Value Chains, that is, supply chains in which intermediate goods are manufactured in several countries before assembly and then exported to the end-user market

(OECD, 2022). The OECD believes that fragmentation of production has already peaked for many of the reasons highlighted above. However, in the case of China, there has been a specific and concerted policy effort, as mentioned above, to capture more supply chain value through de-globalization and this has manifested itself in a significant reduction of what the OECD called 'backward linkages' as more input components of final products are made domestically. In other words, there has been a reduction of the import of intermediate goods whilst, at the same time, Chinese industry has managed to increase its 'forward participation' by increasing the volume of intermediate goods it exports.

Illustrating this trend, in 2005 over a quarter of exports from China relating to global value chains contained foreign content. By 2015 this had fallen to about 17%. Looking at the forward participation, domestic value-added content in products exported from China to end user markets in the rest of the world had increased from just below 58% in 2005 to over 64% in 2015 (ECB, 2022).

On top of this, the imposition under President Trump of huge US trade tariffs on Chinese imports has resulted in an 'In China, for China' industrial strategy. Encouraged by the country's political leaders, consumers are purchasing Chinese-made rather than foreign goods in increasing volumes, a significant shift in behavior from only a few years ago. This trend is particularly evident in the younger demographic which takes pride in buying domestically produced goods. These trends will result in China both becoming more self-sufficient in intermediate goods as well as finished products.

9.3.1. China's growing political and economic reach

At the time of the Great Recession, governments in emerging markets complained bitterly at their treatment at the hands of Western bankers and turned to an eager China to fill the investment void. This added impetus to China's 'Belt & Road Initiative' (BRI), leading to a pivot of supply chains centered on the East, long before there was any talk of a reset, 'Great' or otherwise.

Over the last few years, it has been estimated that China has invested more than one trillion dollars in infrastructure projects linking it to countries in Asia, Africa, Latin America and the Middle East. By offering finance at very cheap rates, it has been able to extend its political influence. The area which the BRI covers is equivalent to 55% of global GDP, 70% of the global population, and gives it influence in regions where 75% of known energy reserves are located (WEF, 2016). As an example of China's growing influence in the emerging world, in Latin America, 19 out of 24 countries have signed up as Strategic Partners to the initiative, including Mexico.

One of the results of the BRI is the development of sino-centric supply chains. Raw materials flow into China from resource rich regions, whilst its finished goods flow back into these markets. In terms of logistics, many international operators find themselves locked out of the contracts to move these goods, with the main beneficiaries being Chinese-based companies.

To counter what they see as a strategic threat – the projection of China's soft power - the US and the EU have plans of their own to finance infrastructure projects in emerging markets, but nowhere near on the same scale.

9.3.2. US-China trade war

The US-China trade war has already led to a major impact on trade over the last two years. Most of the tariffs imposed by the US have targeted the business-to-business sector (rather than consumer) and hence Global Value Chains have been the most affected. Intermediate products represent 57% of the total value of goods which now attract tariffs. Part of the aim was to encourage reshoring and increase the level of US exports. A study undertaken by the US Department of Commerce suggests that at present US manufacturers import 20% of their intermediate goods compared with 15% in 1997. The research indicated that if offshoring was rolled back to the levels last seen in 1997 the US would import around $180 billion less product. This would constitute a reduction in Chinese exports of 2.1% (White House, 2021).

However, there is little evidence that any reshoring is having a material benefit for the US economy. In fact, there have been several unintended consequences of the policy. By 2020,

- Exports of goods affected by tariffs on inputs of intermediate components dropped by 2%
- 300,000 jobs were lost
- US companies paid $46 billion more in tariffs than they otherwise would have done
- Tariffs cost the average US household $600 a year
- There is no evidence that China purchased more US goods - the original aim of the Phase One trade deal (Lobosco, 2020).

Although protectionism has not led to benefits for the US economy, it has resulted in geographic diversification of GVCs away from China. This could be regarded as positive indirect result of the trade war by reducing a systemic over-reliance on the market. Consequently, many MNCs have looked at various 'optionalization' strategies which have included re-shoring, near-sourcing or 'China+' (i.e., sourcing goods from China plus one or more alternative countries).

Some of the main beneficiaries of these policies have been Low-Cost Countries (LCCs) in Asia such as Vietnam. According to the US International Trade Commission, they saw their proportion of US manufactured imports rise almost 30% between 2018 and 2020, in comparison with China which saw its share of the market fall by around 15%.

Given all these headwinds for globalization, it might be considered that there would also be a very strong trend for nearshoring, benefiting all countries, for instance, in Latin America. Indeed, as Mauricio Claver-Carone, the President of the Inter America Development Bank, said this should be the 'golden era for investment'. However, this is not necessarily the case. For example, between 2018 and 2020 imports of manufactured goods from Mexico – a market which would have expected to have been a prime beneficiary of the trade war – to the US stagnated (Stott & Murray, 2022). In fact, in many countries the post pandemic recovery has been slow and this, combined with wage increases (especially those fueled by inflation) and low public investment in infrastructure, has nullified any competitive advantage which they may have had over Chinese competitors.

9.4. Supply Chain Weaponization: 'Ally Sourcing'

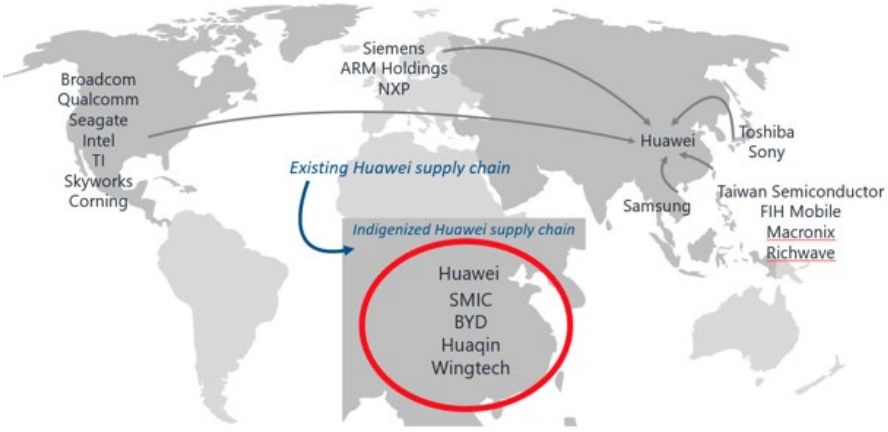
Using international trade as a lever for foreign policy is a practice which has been used by governments for centuries. Recent attempts by successive US administrations (and allies) to influence high tech GVCs are just the latest example of this – so-called 'supply chain weaponization'.

Commencing with the exclusion of Huawei and other Chinese high-tech manufacturers from the development of 5G networks, policy efforts have now been extended to include a ban on the export of advanced chip technology to China to prevent the country from developing its own advanced technology. The Western allies fear that these capabilities would be put to military use – especially given heightened tensions over the future of Taiwan.

The upshot of this is that there is a very real likelihood that manufacturers in the high-tech sector will need to develop 'dual' supply chains. Chinese manufacturers and those supplying the Chinese market will be forced to use local suppliers (plus those based in countries where China's influence is very strong). Global manufacturers which want to continue selling into the US will have to ensure that Chinese components are eliminated from their products. As Liu Young-way, chairman of Taiwanese component manufacturer Foxconn commented: "It will be one [supply chain] for China and those associated with it, and another for the US and their friends."

As can be seen from Figure 9.2, this has meant some very big changes for Huawei. It has been forced to transform what was a highly globalized supply chain to one which is now becoming 'indigenized'. Those countries which have eliminated Huawei from their supplier lists now face delays of the roll out of their 5G networks as Huawei is the world leader in this field. Non-Chinese companies do not have its capabilities or indeed scale to fill the gap.

Figure 9.2. Huawei's de-globalizing value chain



Source: Author

Whilst the US still retains its political and military influence in many parts of the world, it is in effect asking its allies to make decisions that may have major consequences for their economies. Non-aligned countries such as India, and those in Africa, Asia and Latin America may have to decide which side to take. Given China's extensive economic influence this might not always go in America's favor.

Russia's invasion of the Ukraine has accelerated the trend towards what can be called the 'bifurcation' of supply chains. China's position has been strengthened by Russia's pivot eastwards as a result off trade embargos and other sanctions by the West. In return for cheap Russian gas, oil and raw materials, China will provide a ready supply of consumer goods, filling the void left by the departure of Western competitors from the market.

9.5. Trade Keeps on Growing

Despite all the negativity and the criticism from all sides of the political spectrum, it must be noted that global trade is still growing. According to the World Trade Organization (WTO), year-on-year trade volume growth is expected come in at 10.8% in 2021 to be followed by a 4.7% rise in 2022 (obviously influenced by Covid stimulus packages). Even a change of Western policy to promote diversification of sourcing strategies away from China will only have a limited impact on globalization. The focus on Vietnam and other countries in Southeast Asia as alternative low-cost manufacturing locations to China will not result in less globalization, just a change in its structure. The creation of new pan-Asian supply networks will increase the density of upstream transport demand across the region, rather than diminish it.

That is not to say that no 'reset' is needed. The world has changed significantly since the establishment of institutions such as the International Monetary Fund and World Bank at Bretton Woods in 1944 and General Agreement on Tariffs and Trade (GATT), the forerunner of the World Trade Organization, in 1947. These institutions have overseen the development of globalization, with all its attendant benefits and disadvantages, but now need to adjust to the perils and pitfalls of the market environment they have helped to create. For example, as highlighted above, China is undoubtedly using the economic and political muscle which it has been gifted by globalization to extend its influence throughout the world. What it does, and what it is allowed to do, by global institutions with its relatively recently acquired power will probably define the geo-political and economic environment of the next century.

Domestic policy is also increasingly dominated by issues related to the 'fairness' of globalization – although perhaps not in the way that the WEF had in mind. For many politicians and their electors, both in developed and developing markets, 'fair' outcomes can only be achieved by protection of markets and not from liberalization. This is to be regretted as the potential exists for value to be created for all stakeholders - but only if the benefits of globalization are shared across the whole of society. To a greater or lesser extent, Western economies have failed to pivot to a high value manufacturing model focused on intellectual capital and this has created disaffection. This, combined with the unwillingness or inability to address market subsidies and rigging (most egregiously in China but also elsewhere), is the real failure, not globalization.

9.6. Conclusion

Although it is too early to call time on the globalized 'Flat World' described in Thomas Friedman's book of 2005, there is no doubt that major changes to GVCs are underway and have been since the time of the Great Recession. Increasing geo-political tensions, exacerbated by the rise of China, domestic unrest, and the Covid-19 pandemic, are leading to the fragmentation of international trade and a weakening of organizations such as the WTO as political, economic and security priorities unravel 75 years of liberalization.

Re-shoring, near shoring and diversified sourcing strategies will gather momentum in strategic industry sectors as the world bifurcates between the West and China. This trend will be reinforced by volatile energy prices and the imposition of carbon taxes making international transport less attractive to shippers.

The major consequence of this newly politicized and fragmented system will be additional costs and inefficiencies inevitably affecting economic development and jobs. In return, politicians hope to achieve greater supply chain resilience, enhanced national security and positive societal and environmental outcomes. Whether this new paradigm achieves any or all of these policy objectives is yet to be seen.

References

Cullen, T (2022) Short and Long-Term Supply Chain Trends, Ti Insight, UK

ECB (2022) Global value chains: measurement, trends and drivers, European Central Bank. Available from www.ecb.europa.eu/pub/pdf/scpops/ecb.op289~95a0e7d24f.en.pdf

Friedman, T.L., (2005), The World is Flat: A brief History of The Twenty First Century

Lobosco, K (2020) Breaking down the costs of Trump's trade war with China, CNN. Available at https://edition.cnn.com/2020/01/14/politics/cost-of-china-tariff-trade-war/index.html

OECD (2022) The trade policy implications of global value chains, OECD. Available from www.oecd.org/trade/topics/global-value-chains-and-trade/

Stott, M and Murray, C (2022) Why Mexico is missing its chance to profit from US-China decoupling, Financial Times. Available from www.ft.com/content/7fc2adf0-0577-4e13-b9a3-218dda2ddd5b

WEF (2016) Why China could lead the next phase of globalization, World Economic Forum. Available from www.weforum.org/agenda/2016/11/china-lead-globalization-after-united-states/

WEF (2020) The Great reset, World Economic Forum. Available from: www.weforum.org/great-reset/

White House (2021) Building Resilient Supply Chains, Revitalizing American Manufacturing, And Fostering Broad-Based Growth, The White House. Available from www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf

Chapter 10

THE IMPACT OF SANCTIONS ON RUSSIAN BUSINESS ABROAD AND HUNGARIAN BUSINESS IN RUSSIA: PARALLEL STORIES OF ADJUSTMENT

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Executive Summary

This chapter examines how the sanctions imposed on Russia after its 2022 invasion of Ukraine have impacted Russian firms, their direct investment abroad, and Hungarian business presence in Russia, and, in particular, how Russian and Hungarian firms have adjusted to this new reality. It highlights the main commonalities, such as the difficulties of access to finance transactions and the interruption of logistics and supply chains, especially in the areas of technology goods. The chapter also looks at the main differences between Russia and Hungary. In Russia, large firms with exposure to the West have been facing major difficulties in their international operations and have focused their efforts on mitigating the effects of sanctions. On the other side, Hungarian firms investing in and/or exporting to Russia typically try to hold their ground in the Russian market. They are attempting to overcome difficulties such as risks of foreign exchange and non-payment, issues with logistics and supply chain disruptions, problems with banking and financial transactions, increased time and costs of international shipping due to altered routing, additional administrative burdens at the border, air travel restrictions, and a constant need for information to adapt to sanctions and countersanctions. It is uncertain whether the generally positive attitude of Hungarian firms towards staying (and even taking advantage of the situation to expand further) will change over time. The challenges may become too great to take on, not only for smaller, resource-poor, and less-experienced firms, but also for stronger enterprises.

Keywords: Hungary, Russia, multinational enterprises, outward foreign direct investment, sanctions

10.1. Russian firms and direct investment abroad under sanctions

10.1.1. Sanctions applied against Russia

Because of the 2022 war in Ukraine, Russia has become the target of the largest number of sanctions in the world: nearly 12,000 measures were in place in early August 2022 (Castellum.AI, 2022). Many of these measures directly restrict the scope for reciprocal direct investment, particularly in the financial and technology sectors. Russian authorities have responded to these sanctions, with countermeasures. For firms that carry out activities on both sides of the division line, it has become arduous to comply with the contradictory requirements of the two parties. Many of them have responded by reducing, suspending, or eliminating their business deals on the other side (Kalotay, 2022). It goes without saying that a sanctions regime cannot completely disrupt economic relations, but it can make the most basic economic activities extremely difficult and expensive.

Among the sanctions, freezing of Russian banking assets abroad is a very severe measure affecting both inward and outward foreign direct investment (FDI). The universe of the largest Russian banks includes various state-owned entities; therefore, sanctions are applied to them due to their direct links with the power center. There are also entities that are on paper privately owned but are so close to the government that already in 2014 they had been put on the sanctions list. The freezing of the assets of these financial institutions (which has already happened to practically to all Russian banks) has a double negative effect on Russian multinational enterprises (MNEs). On the one hand, it results in the halt of activities or bankruptcy of the affiliates of

[32] The authors are grateful to Gábor Túry, Research Fellow of the Centre for Economic and Regional Studies (KRTK), for his contribution to this chapter. This research was supported by the National Research, Development and Innovation Office of Hungary (under Grant No. FK-138317) and the Eötvös Loránd Research Network Secretariat. The authors had access to the Orbis company database—a property of Bureau van Dijk Editions Electroniques Sarl—at KRTK Databank. Data collection for the chapter was closed on August 15, 2022.

these banks operating abroad, as occurred very early on with the Vienna-based Sberbank Europe, a subsidiary of state-owned Sberbank, with affiliates in seven European countries.[33] On the other hand, this freezing of assets means the impossibility of financing the transactions of Russian MNEs abroad. It also has an impact on access to finance by foreign investors located in Russia. The Russian government may be prompted to apply restrictive measures to stop the outflow of resources, including an obligation to surrender export receipts or prohibition of the repatriation of profits.

The exclusion of Russian banks from the SWIFT payment system makes all business transactions involving the Russian and foreign clients of these banks more costly and cumbersome. Alternatives exist on paper, such as using China's Cross-border Interbank Payment System (CIPS). However, its development may be not so easy and would not prevent the increasing cost of doing business. Moreover, the use of that system may result in side effects, such as the need to rely heavily on the Chinese yuan as the currency of payment/clearing, which may not be desirable for some corporations. As another alternative, within Russia, the Financial Message Transfer System (SPFS) of the Central Bank of Russia has been launched with about 400 users, which may be a solution for purely domestic payments. However, this system is not yet linked with other systems abroad.

Sanctions can lead not only to the freezing of Russian assets abroad but also to their seizure and placement under host-country government trusteeship, such as in the case of Gazprom's former German affiliate, which was taken under German government control despite its formal transfer to another Russian owner (see Section 11.1.2).

Sanctions affecting different sectors of economic and social activities may have varying impacts on FDI. Two of them, banning Russian vessels from foreign ports and Russian aircraft from foreign airspace, can seriously hamper business transactions between Russia and the rest of the world, and can act as a major disincentive to FDI. Sanctions against rich individuals (oligarchs) also hurt Russian firms because they almost automatically drag the companies, they control onto the sanctions list.

10.1.2. Large Russian MNEs are affected by sanctions and adjust to them

The bulk of outward FDI of Russia is carried out by a handful of large MNEs. Almost all of these firms and/or their executives and owners fell under sanctions, with an immediate negative impact not only on MNEs' operations, but also on Russia's foreign economic links. The total foreign assets of the 20 largest MNEs were valued at USD108 billion at the end of 2019 (Table 10.1), compared with a total outward FDI stock of USD407 billion in the same year (CBR, 2022c). The majority of these MNEs are natural-resource-based firms, with oil and gas companies occupying the top three posts. Their strategies are related to the control of their value chains, typically upstream at home and in developing countries and downstream in developed countries. Certain firms are actively involved in FDI transiting through other countries or leaving the country and coming back (called "round-tripping"). Some (e.g., VEON, NLMK, and Evraz) have undertaken "corporate inversion", and now have their official headquarters registered abroad, while Russian individuals remain the main shareholders. State-owned MNEs make up more than one-third of the list.[34] Together, these firms account for almost half of the assets of the top 20 group. However, the impact of the Russian government does not stop there. The privately owned MNEs are also under state influence: the government has an informal say in their major strategic decisions (Panibratov, 2013).

[33] Bosnia and Herzegovina, Croatia, Czechia, Germany, Hungary, Slovenia, and Serbia.

[34] Atomenergoprom, Gazprom, Rosneft, Russian Railways, Sovcomflot, VSMPO-Avisma (with only a minority blocking share of the state), and Zarubezhneft.

Table 10.1. Most of the 20 largest Russian non-financial MNEs are affected by sanctions
Firms ranked by foreign assets at the end of 2019 (USD billion and %)

Rank	Company	Industry	Long-term foreign assets (USD billion)		Total foreign assets (USD billion)		Share of foreign assets in total assets (%)	
			2018	2019	2018	2019	2018	2019
1	Lukoil	Oil and gas	18.4	21.3	24.8	28.8	30	30
2	**Gazprom**	Oil and gas	14.8	15.6	18.5	18.9	6	5
3	**Rosneft**	Oil and gas	8.3	11.1	10.8	13.6	6	7
4	**VEON**	Telecom	6.2	6.8	8.0	8.0	56	50
5	Rusal	Metallurgy	3.7	4.2	5.4	6.5	34	36
6	**Sovcomflot**	Transport	5.6	5.5	6.0	6.1	84	83
7	**Atomenergoprom**	Nuclear energy	3.8	4.1	5.7	5.5	12	10
8	**Russian Railways**	Transport	1.7	2.0	3.1	3.3	4	4
9	**Evraz**	Metallurgy	2.1	1.9	3.7	3.2	40	32
10	NLMK	Metallurgy	1.4	1.3	2.9	2.5	29	24
11	**EuroChem**	Chemicals	1.4	1.4	1.7	1.8	18	15
12	NordGold	Metallurgy	1.3	1.3	1.6	1.7	64	61
13	Russneft	Oil and gas	1.2	1.6	1.4	1.7	37	36
14	**VSMPO-Avisma**	Metallurgy	0.1	0.2	1.2	1.4	25	25
15	**Zarubezhneft**	Oil and gas	0.5	0.6	1.0	1.2	37	35
16	**MegaFon**	Telecom.	0.2	0.5	0.2	1.0	3	9
17	TMK	Metallurgy	0.9	0.3	1.9	0.8	38	15
18	**Norilsk Nickel**	Mining	0.5	0.4	0.7	0.7	4	3
19	**MMK**	Metallurgy	0.3	0.3	0.5	0.5	7	6
20	AFK Sistema	Holding	0.9	0.3	1.6	0.5	8	2
Total of the top 20			73.1	80.7	100.8	107.6		

Note: Firms shown in bold are under sanctions.
Source: Authors' compilation based on Kuznetsov (2021).

At the level of individual firms, the hemorrhage started early. As mentioned above, Sberbank Europe was the first in a potentially long flow of Russian bankruptcies abroad. Another case of instant bankruptcy was that of the Switzerland-based Nord Stream 2 holding company, which oversaw a trans-Baltic Sea gas pipeline between Russia and Germany whose certification was stopped by German authorities.

Some Russian MNEs also face difficulties in the financing of their overseas operations. In the first half of 2022 Severstal and Evraz, two large Russian integrated iron and steel producers, defaulted on their international bond payments, despite the availability of sufficient funds to pay them. The reason for this paradox was that these MNEs' foreign bankers refused to process the payments on the grounds that the principal owners were oligarchs put on the sanctions list. In March 2022, Severstal, owned by the Russian oligarch Alexei Mordashov's Severgroup, failed to make a USD12.6 million interest disbursement to holders of bonds worth USD800 million after its banker, Citigroup, froze those payments (MacDonald, 2022). Also in March 2022, Evraz, partly owned by another Russian oligarch, Roman Abramovich, was blocked by its banker, the New York affiliate of Société Générale, from paying the USD18.9 million coupon on its USD700 million bond partly due to U.K. sanctions against the oligarch (Financial Times, 2022). The U.K. justified its sanctions by the fact that Evraz produces 28% of all Russian railway wheels and 97% of the country's rail tracks, which were "of vital significance as Russia uses rail to move key military supplies and troops to the frontline in Ukraine" (Holman & Bouckley, 2022). As a side effect, the financial difficulties of Evraz affected its North American operations. The first lay offs were reported in Canada in May and June 2022 (Ponticelli, 2022), though this scaling back did not apparently affect the firm's large plant in Pueblo, Colorado (Tolan & Ash, 2022).

Some Russian firms have designed strategies to bypass sanctions, with varying success. The state-owned shipping company Sovcomflot avoided the seizure of its assets by selling off at least a dozen tankers (of a fleet of 121 vessels). Some transactions took place "through a web of shell companies, shielding the vessels' ultimate owners from the risk of penalties" (Moscow Times, 2022). Another part of the strategy consisted of transferring selected corporate headquarter functions to Dubai in the United Arab Emirates. This partial "corporate inversion", following the footsteps of other firms (see the discussion on Table 10.1), allowed Sovcomflot to obtain safety certification from India for over 80 vessels managed from its Dubai center (Marine Insight, 2022). In another case, in March 2022, the Russian gas giant Gazprom terminated its participation in the Germany-based Gazprom Germania[35] and transferred its shares and company assets held in Europe to a former Gazprom unit controlled, through voting rights, by a hitherto unknown Russian firm—to no avail. In April 2022, Gazprom Germania was brought under the control of the German energy regulator Bundesnetzagentur. In retaliation, in May 2022, Russia imposed sanctions against the former Gazprom Germania units.[36]

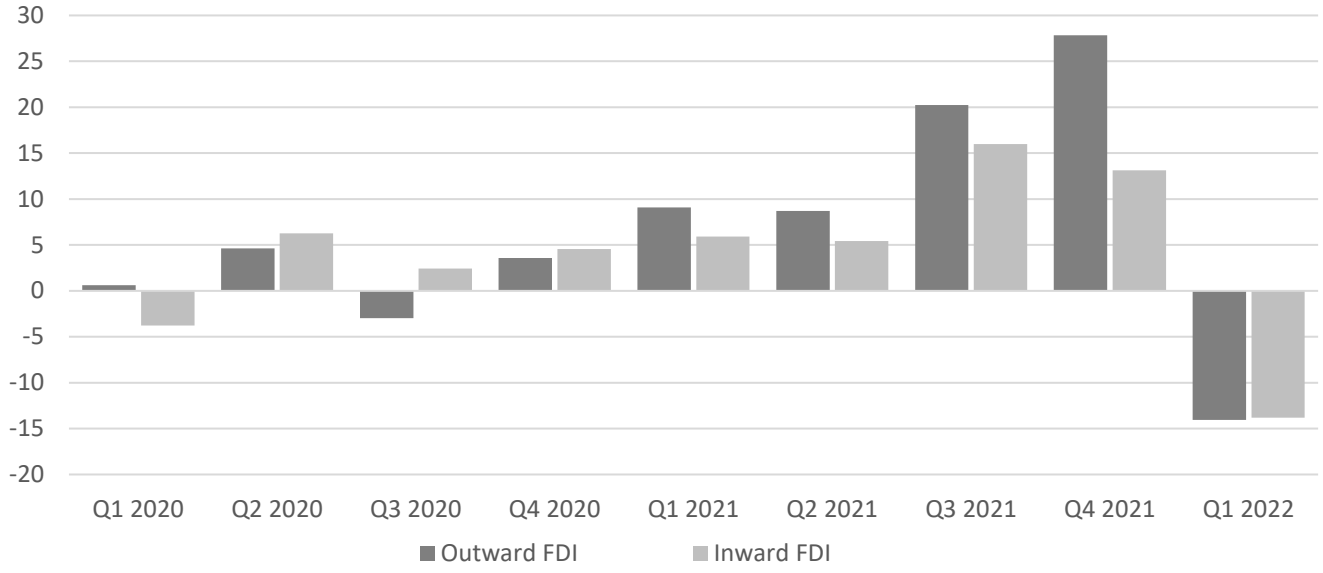
[35] Gazprom Germania was renamed SEFE Securing Energy for Europe in June 2022.
[36] In September 2022, thus after this chapter was completed, Germany also placed the local units of Russian state-owned oil firm Rosneft under fiduciary management.

Another response of Russian firms to sanctions has consisted of the use of the Swiss trading platform, which traditionally manages the bulk of Russian commodity transactions. Though Switzerland decided to apply the same sanctions as the EU, Switzerland-based MNEs continued some deals in Russian coal, and so did some large Russian coal producers maintaining subsidiaries in the country (including SUEK and Evraz; Atkins, 2022). There were also questions raised about the eventual indirect imports of Russian gold via the U.K. and Dubai (Soguel, 2022), though the adoption of the EU's July 2022 ban on both direct and indirect imports of gold closed, in principle, this loophole on sanctions.

10.1.3. The plunge in the FDI outflows of Russia as a consequence

As a result of the above-mentioned issues, the 2022 war in Ukraine increases uncertainties about FDI to and from Russia and is expected to affect it negatively in the short, medium, and long run. This was already visible in the first quarter of 2022, which consisted of 60% peacetime days and 40% days at war. Both inflows and outflows dropped sharply and turned largely negative due to divestments (Figure 10.1). Of the two phenomena, it is outflows that drive the foreign operations of Russian MNEs. However, via the above-mentioned phenomenon of round-tripping, they usually move together with inflows. In outflows, the decline in the first quarter of 2022 was breaking a post-COVID recovery trend.

Figure 10.1. The quarterly FDI inflows and outflows of Russia plunged in Q1 2022
Q1 2020–Q1 2022 flows (USD billion)



Source: Authors' compilation based on data from CBR (2022a).

10.2. Hungarian business presence in Russia under sanctions

10.2.1. Hungary's special relations with Russia and Hungarian business in Russia

Hungary occupies a somewhat special place among the members of the EU and the North Atlantic Treaty Organization (NATO) countries in terms of its political-diplomatic rapprochement and institutional convergence with autocratic Russia since 2010. In 2012, Prime Minister Orbán launched his "Eastern Opening" policy in an effort to diversify Hungarian exports and reduce dependence on EU markets. Trade houses were opened in the target countries and delegations travelled to them, including Russia, and cultural and historical ties were resumed. However, trade and investment data prove there has been no breakthrough in the "Eastern Opening" with Russia. In 2021, Russia's share in Hungarian exports of goods reached only 1.5% (Eurostat Comext, 2022), and 1.9% in Hungarian outward FDI stock (HNB, 2022). Hungarian–Russian trade remains unbalanced in favor of Russia due to large Hungarian imports of crude oil, oil products, and natural gas. Most Hungarian exports to Russia usually consist of agri-food products, medicine, machinery, and transport equipment. At the end of 2021, Hungarian FDI stock in Russia totaled EUR648 million as per data from the Central Bank of Hungary (HNB, 2022).[37] Hungarian FDI in Russia spans a variety of industries and activities, most prominently banking, oil production, pharmaceutical production and sales, feed production and sales, construction and real estate, and medical equipment sales, but it also includes chemical products sales, medical implant manufacturing and sales, and others. The Russian market is of limited importance for the Hungarian economy, though it continues to be important for selected Hungarian export products and investor firms. Hungary's leading retail bank OTP Bank, the Hungarian-based multinational pharmaceutical company Gedeon Richter, and the Hungarian national oil champion MOL stand out as the largest direct investors in Russia (Table 10.2).

[37] The Central Bank of Russia shows the somewhat lower figure of USD564 million (at 2021 exchange rates) (CBR, 2022b).

Table 10.2. OTP Bank, Gedeon Richter, and MOL are the largest direct investors in Russia
The largest subsidiaries of Hungarian companies in Russia, by own capital, 2021 (USD thousand and number of employees)

Russian company	Activity	T/O (th $)	No. of empl.	Own cap. (th $)	Hungarian owner
OTP Bank	banking	..	..	..	OTP Bank (HU, 66.20%), Alyansrezerv (RU, 31.70%) [> OTP Bank (HU, 100.00%)], MFB Invest (HU, 1.20%)
Richter Gedeon-Rus	production of medicines	204,654	376	77,276	Richter Gedeon (HU, 100.00%)
Baitex	oil exploration and production	160,711	214	52,382	MK Oil and Gas (NL, 100.00%) > MOL (HU, 51.00%)
Greif Perm	manufacturing of steel drums, eurocubes, and clovertainers	107,330	439	41,158	Greif Hungary (HU, 99.00%)
Egis-Rus	medicine storage, sales, and marketing	114,301	407	28,272	Egis (HU, 100.00%)
Terra Nova Invest	owner and operator of dairy farms	38	10	24,358	New World Farming (HU, 99.99%)
Alyansrezerv	business and management activities for the Russian OTP Bank	0	2	21,139	OTP Bank (HU, 100.00%)
Veles	rental of commercial property	2,415	37	17,363	Stoa (HU, 100.00%)
Nyumedtekh	supplying of medical products and maintenance services	63,997	59	13,768	New Medical Technologies (HU, 90.00%)
Agrofeed Rus	owner of a feed premix plant	51,224	131	12,788	Agrofeed (HU, 100.00%)
Torgoviy Kvartal Naberezhnye Chelny	owner of Torgoviy Kvartal, a shopping center	5,961	1	11,424	Prinstar (CY, 100.00%) > [...] > Shareforce Befektetési (HU, 70.00%)
Gedeon Richter Farma	overseeing of Richter's marketing and sales network	44,091	811	7,204	Richter Gedeon (HU, 100.00%)
BSC Msc	software development for high-tech customers	11,193	221	4,652	Finshape Czechia (CZ, 90.00%) > Algorithmiq (CZ, 79.50%) > Algorithmiq Invest (HU, 100.00%)
Wanhua Borsodchem Rus	customer support for chemical product sales	72,365	241	2,347	BorsodChem (HU, 99.00%)
Finservis	financial broker in point-of-sale lending	2,189	81	2,241	Inga Kettő (HU, 99.00%), MFM Projekt Beruházási és Fejlesztési (HU, 1.00%) > OTP Bank (HU, 100.00%)
Energoinvest	supplying heating, construction and technical re-equipment of boiler houses	9,503	66	2,177	SPTK Intelset (RU, 99.98%) > Onyx Infrastructure & Development Corp. (HU, 100.00%)

Note: T/O = turnover; .. = not available; CY = Cyprus; CZ = Czechia; HU = Hungary; NL = Netherlands; RU = Russia.
Source: Authors' compilation based on information from the Bureau van Dijk's Orbis company database.

10.2.2. The impact of sanctions and Russian countermeasures on Hungarian business in Russia

Hungarian companies operating in Russia have been facing a complex and diverse set of threats since Russia invaded Ukraine in February 2022. The ruble's plunge after the outbreak of the war led to significant losses for these companies, although the exchange rate has since stabilized. Banking and money transfers have been a problem due to several Russian banks being excluded from the SWIFT system and because of Russian measures on foreign currency conversion and on payments into the bank accounts of firms from non-friendly countries. Despite the cordial Hungarian–Russian political relations, Hungary, as an EU member (thus not individually), is also on the list of unfriendly countries. In turn, OTP's continued presence in Russia helps Hungarian companies finance their day-to-day operations there (Horváth, 2022; Kiss, 2022).

The procurement of raw materials and components has become particularly problematic for companies in Russia, not only due to the Western sanctions but also to the fact that some foreign companies interpret those sanctions too strictly and prefer not to deliver to Russia, while several foreign suppliers have voluntarily stopped supplying the Russian market for moral reasons or under pressure from their government or home-country society. The replacement of these suppliers is difficult, costly, and time-consuming. Companies operating in Russia are trying to build up alternative supplier sources abroad (or in some cases, within the country). To help alleviate this situation, Russia introduced a "parallel imports" scheme. To source the necessary products, Russian and foreign companies operating in Russia have turned to intermediaries located in countries that do not enforce or support sanctions against the country (Horváth, 2022; Kiss, 2022). The Russian government signed a resolution establishing fast-track imports of electronic devices into Russia and abolishing import duties on production equipment, components, feedstock, and materials for implementing major investment projects (MFRF, 2022a, 2022b). Nonetheless, suppliers have switched to immediate payment or prepayment as opposed to payment due 30 to 60 days (Kiss, 2022).

Road freight transport from Hungary to Russia has also become more complicated, costly, and time-consuming for Hungarian businesses. Rail transport via Ukraine had to be switched to trucks, and truck traffic was typically shifted to the Baltic States (Latvia and Lithuania). Belarus is no longer a real transit option, since it announced a ban on trucks registered in the EU entering its territory in April 2022, though certain exceptions apply, such as for drugs and medical goods. For others, it is possible to recouple semi-trailers or reload goods into Belarusian trucks, but this is not attractive for Hungarian transporters (Kiss, 2022). It

is also difficult for Hungarian businesspeople to travel by air from Hungary to Russia because the EU shut down its airspace to Russian aircrafts in February 2022, followed by Russian countermeasures and by decisions by non-Russian carriers to cancel flights to and from Russia (Konkoly, 2022).

The increase in the costs cannot be fully passed on Russian consumers under the current economic conditions in Russia. The Hungarian government has not provided aid to Hungarian companies in Russia since the outbreak of the war (Kiss, 2022). The state-owned export-credit agency Eximbank and export-credit insurance company Mehib have stopped taking risks. In the case of existing credit insurance, Mehib still covers the loss if the customer does not pay (Gyenis, 2022).

Hungarian investors are much less prone to leave Russia than firms from other countries in Central and Eastern Europe, especially from Czechia and Poland. According to the Yale CELI data, 75% of the Czech firms suspended their operations in Russia, and another 6% left the country. As for Polish firms, 38% reported suspending their activities, and 43% withdrew. The corresponding shares in the Hungarian sample is 20% and 0%. It must be noted that this sample is very small and includes corporations having any type of business links with Russia (CELI, 2022).

Hungarian companies are not experiencing any hostility on the Russian market and are even receiving administrative assistance in this situation. These companies, however, need to be kept informed so that they do not take any action that would result in punitive measures from either the EU or Russia (the implementation of EU sanctions is considered a punishable act in Russia), but at the same time, they should not apply the sanctions too strictly. On the other hand, some Hungarian firms hope to take over the markets of foreign competitors who have withdrawn from Russia (Gyenis, 2022; Horváth, 2022; Kiss, 2022; Konkoly, 2022).

10.2.3. How leading Hungarian companies adjust to difficulties in Russia

Each of the three largest Hungarian-based FDI investors in Russia—the OTP Group in the banking sector, the pharmaceutical company Richter, and the oil and gas firm MOL—is taking a different approach to the situation. The exposure of the OTP Group to Russia is relatively low, though this depends largely on which indicator is used: Russian operation provided 2.9% of the Group's consolidated assets, 3.9% of the consolidated net loans, and 7.9% of the consolidated equity at the end of 2021 and 7.6% of the consolidated adjusted after-tax profit in 2021. Following the outbreak of the war in Ukraine, the Russian OTP Bank suspended all lending. Later, it resumed the sales of point-of-sale (POS) and cash loans, in small volumes and on conservative terms. The Bank, however, does not engage in new corporate lending; it only extends the maturities of some existing loans. The volume of corporate loans had halved year on year by the end of the first half of 2022, even though none of the Bank's corporate clients have been affected by sanctions. The Russian OTP Bank made a significant loss in the first half of 2022, but by the second quarter it was already turning a profit. The OTP Group is facing political pressure from the Ukrainian government to withdraw from the Russian market, which it does not intend to do—though does not rule this out in the longer term. However, a 2022 executive order of the Russian president bans such a move until the end of the year (Nagy, 2022; OTP Bank, 2022a, 2022b).

The share of the post-Soviet region in Richter's total pharmaceutical sales has decreased following the events in Ukraine in 2014, but Russia still accounted for 13.5% of Group sales in 2021. Paradoxically, its revenues in Russia increased both in Hungarian forints and Russian rubles in the first half of 2022 compared to the same period of the previous year. This is because although medicines are not subject to Western sanctions, many people stockpiled them after the outbreak of the war in Ukraine, and there have also been price increases in the Russian market. Difficulties abound, though. Richter is facing exchange rate risks in the Russian market. Further, the delivery time to the Russian market doubled for a while but has since returned to normal.[38] In Richter's factory in Russia, there is an issue with getting the necessary raw materials. For example, they had to switch to local sources for packaging materials. On top of this, some Western companies are unwilling to work for Russian customers, which disrupts the supply of components and the completion of IT tasks. Since 60% of Richter's products marketed in Russia are over the counter, Richter is recouping the expected losses by further raising prices. Like other multinational pharmaceutical manufacturers, Richter has no plans to withdraw from the Russian market, despite the pressure from the Ukrainian government to do so (Baka, 2022; Bonta, 2022; Növekedés.hu, 2022; Richter Gedeon, 2022a, 2022b).

MOL's exposure to Russia is low in terms of operations in the Russian market. Having sold its other exploration and production interests, MOL's stake in the company Baitex is the Group's only upstream project in Russia. In 2021, Baitex's Baitugan field in the Volga-Ural region accounted for only 3.6% of the Group's average daily hydrocarbon production (MOL, 2022). The war in Ukraine has been affecting MOL primarily through its imports from Russia rather than its activities in the Russian market.[39] On the import side, the crisis poses serious risks to MOL, but so far MOL has reaped large profits from the discount of Russian Urals

[38] Richter shifted to the Belarusian corridor in 2015. Its products are exempted from the 2022 Belarusian ban. (Based on personal information from Richter on September 28, 2022, after this chapter was finalized.)

[39] A May 2022 media report suggests that MOL's planned rubber bitumen plant project in Tatarstan had just been suspended (Kiss, 2022). MOL can neither confirm nor deny whether this is the case or not, and whether, if true, it was a result of the war. (Based on personal information from MOL on October 10, 2022, after this chapter was finalized.)

crude—delivered to MOL via the Druzhba pipeline through Ukraine—to global benchmark Brent.[40] Under the EU's sixth package of sanctions against Russia, approved at the end of May 2022, such piped crude oil imports will be exempted. However, the physical interruption of crude oil transit in Ukraine is still a risk. In August 2022, crude flows to Hungary via Ukraine were halted for six days due to sanctions preventing Russia from paying the transit fee to Ukraine. Eventually, MOL paid the transit fee to ensure the resumption of supplies.

10.3. Conclusions

The war in Ukraine adds major uncertainties to FDI to and from Russia and will affect it negatively. It will also hurt Hungarian firms that have decided to stay in the country. The degree of damage will depend on the evolution of the war and of the sanctions and Russian countermeasures, which are not fully known yet.

The experience of Russian firms adjusting to the wave of sanctions in 2022 proves that despite the financial difficulties and the increase in the cost of doing business, at least some MNEs have been attempting to continue transactions in the West, as long as the rules and conditions allow it or there have been ways around them. However, a long war and the ever-strengthening effects of the measures could force these companies to give up on a direct presence in Western markets and switch their activities to third countries. This chapter has highlighted only some salient cases of immediate adjustments to sanctions. Shutdowns or withdrawals due to sanctions have taken place for other Russian companies that are not discussed in this chapter, such as in the cases of the railway machine-building company Transmashholding in Hungary, the heavy industry and manufacturing conglomerate OMZ in Czechia, and the independent natural gas producer Novatek in Poland.

From the point of view of repercussions for the world economy, it is to be recalled that the largest Russian MNEs, including the state-owned ones, are global leaders in oil and gas, other types of mining, and metallurgy. They control extensive value chains, in most cases from the upstream, and their actions affect the entire industry in which they operate. They not only attempt to escape sanctions but also retaliate to the outside world. We are reminded of that reality in particular when Gazprom turns on and off its supply to the European gas markets on behalf of its owner, the Russian state.

FDI to and from Russia is expected to remain sluggish for a long time if no exit strategy to stop the conflict is developed quickly. The fall in both directions of FDI will, in the end, hurt the economic capacities of Russia, already affected by a previous round of sanctions imposed in 2014. Decoupling of the Russian economy from FDI partners works—if it works—only partially, and at a relatively high cost. That in turn could thwart the very economic fundamentals of the war effort. The calls of the Russian government for a reorientation of foreign economic relations do not promise too much success.

On the other side, the Hungarian companies—none of which are major players in the global value chain, rather regional players—typically try to hold their ground in the Russian market. The question is how their generally positive attitude towards staying and even taking advantage of the situation to expand further will change over time. They have the political and administrative support of the Hungarian government. The war in Ukraine has left Hungarian–Russian political relations mostly untouched, while other Central and East European countries have seen a significant deterioration in this respect. But cordial bilateral political relations and Hungarian political-administrative support for companies operating in the Russian market do not go hand in hand with financial support. Even in peacetime, Russia is a difficult place to operate in, though those with a long presence in the Russian market have a great deal of experience in mitigating risks and losses. However, the extensive set of difficulties associated with the current situation may become too much to take on, not only for smaller, resource-poor, and less-experienced firms but also for stronger enterprises. The three large Hungarian-based companies examined in this chapter are standing their ground, despite Western sanctions, Russian countermeasures, and outside political pressure to discontinue business with Russia.

References

Atkins, J. (2022, June 22). Sanctions call time on Switzerland's Russian coal trading hub. Global Trade Review—GTR. Retrieved July 17, 2022, from https://www.gtreview.com/news/europe/sanctions-call-time-on-switzerlands-russian-coal-trading-hub/

Baka, F. Z. (2022, July 1). Orbán Gábor Richter-vezér: Szinte naponta üzennek Kijevből, hogy ideje elhagyni az orosz piacot. Hvg.hu. Retrieved July 1, 2022, from https://hvg.hu/360/202226__orban_gabor_richtervezer__haborurol_extraadokrol__kijevi_uzenet

Bonta, M. (2022, March 1). Megérzi a Richter is a háború hatását. Népszava. Retrieved May 27, 2022, from https://nepszava.hu/3148212_megerzi-a-richter-is-a-haboru-hatasat

Castellum.AI. (2022). Russia sanctions dashboard. August 5. Retrieved August 9, 2022, from https://www.castellum.ai/russia-sanctions-dashboard

Central Bank of Russia (CBR). (2022a). Balance of payments of the Russian Federation (standard components). 7 July. Retrieved August 2, 2022, from https://www.cbr.ru/vfs/eng/statistics/credit_statistics/bop/bal_of_payments_standart_e.xlsx

Central Bank of Russia (CBR). (2022b). Direct investment in the Russian Federation: Inward positions by instrument and partner country (directional principle). May 30. Retrieved June 3, 2022, from https://www.cbr.ru/vfs/eng/statistics/credit_statistics/direct_investment/10e-dir_inv.xlsx

Central Bank of Russia (CBR). (2022c). Direct investment of the Russian Federation abroad: Outward positions by instrument and partner country (directional principle). May 30. Retrieved July 30, 2022, from https://www.cbr.ru/vfs/eng/statistics/credit_statistics/direct_investment/16e-dir_inv.xlsx

Chief Executive Leadership Institute (CELI). (2022). Over 1,000 companies have curtailed operations in Russia—but some remain. New Haven, CT: Yale School of Management, July 17. Retrieved July 17, 2022, from https://som.yale.edu/story/2022/over-1000-companies-have-curtailed-operations-russia-some-remain

[40] That discount has been due to voluntary embargo by different market participants on business with Russian crude, to issues related to official sanctions on Russia, and to other risks.

Eurostat Comext. (2022). Retrieved May 29, 2022, from http://epp.eurostat.ec.europa.eu/newxtweb/
Financial Times. (2022, March 21). Evraz says bond payment blocked over Abramovich sanctions. Retrieved July 13, 2022, from https://www.ft.com/content/00b8e832-4a08-4f6e-9644-46b00f7e8b1d
Gyenis, Á. (2022, June 3). Mihez kezdenek a magyar cégek Oroszországban és Ukrajnában? Ki segít rajtuk? Hvg.hu. Retrieved June 3, 2022, from https://hvg.hu/360/202222__eximcsoport__allami_helytallas__hruscsov_es_avetomag__kibiztositott_kovetelesek
Holman, J., & Bouckley, E. (2022, May 5). UK sanctions Russian steelmaker Evraz. S&P Global Commodity Insights. Retrieved July 13, 2022, from https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/metals/050522-uk-sanctions-russian-steelmaker-evraz
Horváth, L. (2022). Magyar tulajdonú vállalat oroszországi tapasztalatai. "Az orosz-ukrán háború gazdasági hatásai", Webinar, Hungarian Chamber of Commerce and Industry, June 2.
Hungarian National Bank (HNB). (2022). Foreign direct investment position abroad, broken down by countries and economic activities, in Euro million [excluding SPEs]. March 23. Retrieved June 3, 2022, from https://statisztika.mnb.hu/timeseries/data-5635
Kalotay, K. (2022). The war in Ukraine deals a blow to Russia's foreign direct investment links. Challenges, No. 238. Budapest: Institute of World Economics, Centre for Economic and Regional Studies, March 4. https://doi.org/10.2139/ssrn.4050049
Kiss, M. (2022, May 13). Maradnak a magyar gyártócégek Oroszországban. Index. Retrieved May 13, 2022, from https://index.hu/gazdasag/2022/05/13/mkik-orosz-tagozat-magyar-cegek-gyartatas-oroszorszag-logisztika-szallitmanyozas/
Konkoly, N. (2022). Lehetőségek és nehézségek a magyar-orosz gazdasági kapcsolatokban. "Az orosz-ukrán háború gazdasági hatásai", Webinar, Hungarian Chamber of Commerce and Industry, June 2.
Kuznetsov, A. V. (2021). Direct investment from Russia abroad: Changes since 2018. Herald of the Russian Academy of Sciences, 91, 700–707. https://doi.org/10.1134/S1019331621060162
MacDonald, A. (2022, March 25). How a Russian steel giant was unplugged from the Western economy. Wall Street Journal. Retrieved July 12, 2022, from https://www.wsj.com/articles/sanctions-unplugged-russian-steel-giant-severstal-from-western-economy-11648200718
Marine Insight. (2022, June 24). Russia's oil tankers receive safety cover from India via Dubai firm. Retrieved July 12, 2022, from https://www.marineinsight.com/shipping-news/russias-oil-tankers-receive-safety-cover-from-india-via-dubai-firm/
Ministry of Finance of the Russian Federation (MFRF). (2022a, May 16). Meeting with deputy prime ministers on current issues. Retrieved June 27, 2022, from http://government.ru/en/news/45410/
Ministry of Finance of the Russian Federation (MFRF). (2022b, May 16). The government fast-tracks imports of electronic devices and equipment into Russia. Retrieved June 27, 2022, from http://government.ru/en/docs/45409/
MOL. (2022). Consolidated Annual Report 2021. Retrieved July 4, 2022, from https://molgroup.info/storage/documents/publications/annual_reports/2021/mol_plc_consolidated_annual_report_2021_eng.pdf
Moscow Times. (2022, May 13). Russia's Sovcomflot sells tankers as sanctions loom—WSJ. Retrieved July 12, 2022, from https://www.themoscowtimes.com/2022/05/13/russias-sovcomflot-sells-tankers-as-sanctions-loom-wsj-a77666
Nagy, L. N. (2022, August 11). Az OTP megmagyarázta, hogy válság idején hogyan tett szert ekkora nyereségre. Index. Retrieved August 11, 2022, from https://index.hu/gazdasag/penzbeszel/2022/08/11/rekord-szukseg-otp-nyereseg-reszveny-osztalek/
Növekedés.hu. (2022, May 10). Erős negyedévet zárt a Richter, kitartanak az orosz piacon. Retrieved May 28, 2022, from https://novekedes.hu/penzugy/eros-negyedevet-zart-a-richter-kitartanak-az-orosz-piacon
OTP Bank. (2022a). Consolidated Financial Statements in accordance with International Financial Reporting Standards as adopted by the European Union and independent auditors' report for the year ended 31 December 2021. Retrieved July 24, 2022, from https://www.otpbank.hu/static/portal/sw/file/220413_IFRS_konsz_e_064.pdf
OTP Bank. (2022b). Half-Year Financial Report: First Half 2022 Result. Retrieved August 15, 2022, from https://www.otpbank.hu/static/portal/sw/file/OTP_20222Q_e_final.pdf
Panibratov, A. (2013). The influence of the state on expanding Russian MNEs: Advantage or handicap? Russie.Nei.Visions, No. 73. Paris: IFRI Russia/NIS Center. Retrieved March 3, 2022, from https://www.ifri.org/sites/default/files/atoms/files/ifriandreypanibratovrussiancompagniesengdecember2013.pdf
Ponticelli, D. (2022, June 17). 170 Regina Evraz steel mill workers laid off since May, company says more expected. CBC News. Retrieved July 12, 2022, from https://www.cbc.ca/news/canada/saskatchewan/evraz-steel-mill-workers-layoffs-1.6493094
Richter Gedeon. (2022a). Nemzetközi pénzügyi beszámolókészítési szabványok szerint készített konszolidált beszámoló a 2021. december 31-ével zárult évről. Retrieved July 29, 2022, from https://e-beszamolo.im.gov.hu/oldal/beszamolo_kereses
Richter Gedeon. (2022b). Richter Group Report, H1 2022. Retrieved August 13, 2022, from https://www.gedeonrichter.com/-/media/sites/hq/documents/investors/presentations/en/2022/richter-2022-h1_en_final.pdf
Soguel, D. (2022, June 27). Swiss gold imports come under scrutiny as G7 targets Russia. SWI swissinfo.ch. Retrieved July 14, 2022, from https://www.swissinfo.ch/eng/-swiss-gold-imports-come-under-scrutiny-as-g7-targets-russia/47707048
Tolan, C., & Ash, A. (2022, April 4). This Colorado steel mill 'built the American west,' but its ownership has ties to Russia. CNN. Retrieved July 12, 2022, from https://edition.cnn.com/2022/04/04/business/colorado-steel-plant-russia-military-invs/index.html

Chapter 11

GLOBAL PRESSURES AND EMPLOYEE-CENTERED REPORTING PRACTICES

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Executive Summary

The recent internationalization of leading Latin American companies uncovers tensions due to the global demands on social practices and the way to report them. Traditional social practices of these companies aim to enhance employee and relevant stakeholders' welfare but contrast with global requirements of international institutions or global value chains (GVC). Thus, this chapter presents the changes in the Latin American multinational corporate reports' cover letters on employee-centered practices considering the companies' internationalization and participation in GVCs. The analysis shows a late entrance to publishing sustainability reports, and the employee-centered practices received few entries in the cover letter. The description of such practices used the language of sustainability and competitiveness (performance management, human rights, ethics, diversity, gender equality, or inclusion training). The reporting frameworks of the Global Reporting Initiative (GRI) and Global Compact (GC) seem to exercise more pressure to comply with the global social standards than other actors of GVC.

Keywords: Latin American Multinationals, Sustainability Reporting, Global value chains, Employee-centered practices

11.1. Introduction

Scholars argue that in Latin America, large business organizations have a long history of performing a significant role in socioeconomic development (Davila, 2021a; Logsdon, Thomas, & Van Buren III, 2006; Schneider, 2013). Remarkably, economic history shows how businesses introduced social practices that built social infrastructure to provide their workers with benefits that cover their basic needs of education, health, and living standards (Davila, 2021a; Rojas Sandoval, 1997; Saragoza, 1988). For example, since the early XX Century, companies have built and sponsored primary, vocational, and college schools, health clinics, and hospitals and financed various housing programs for workers and their families. Moreover, many social practices also evolved to serve nearby communities (Davila, 2021b).

Two main streams of analysis seek to explain such social practices. One is the familiar management style adopted by early entrepreneurs in the region (Davila, 2021b), and two is that those entrepreneurs adopted a welfare approach to their workers, aiming to compensate for the labor market's precarious conditions (Rojas Sandoval, 1997; Saragoza, 1988). Such labor initiatives were considered a managerial innovation to build good labor relations that prevail today (Davila, 2021b).

A deeper analysis of the familiar management style of prominent Latin American companies shows that early and later generations of entrepreneurs firmly adhere to the principles of the Social Doctrine of the Catholic Church (Salas-Porras, 2001a, b; Saragoza, 1988). These principles dictate how to conduct companies and the obligations of businesses toward their employees and community. Thus, companies face tensions when they receive pressure from international organizations that promote other premises for social practices, such as the principles of sustainable development of the United Nations (UN) or the need to report their compliance with the GRI Standards. Also, when companies are part of a GVC, and the parent company exerts pressure on the rest of the supply chain to adopt such international principles. Moreover, tension can also come from the local communities by not accepting universal principles of social practices or the lack of knowledge that new generations of family business managers might have about the legislation for social development in other countries.

Therefore, the extant literature on employee-centered social practices of major Latin American companies attributes them mainly to the local context conditions (e.g., familiar managerial style, precarious labor conditions) (Davila, 2021a; Rojas Sandoval, 1997; Saragoza, 1988). However, today, such companies are large multinationals operating in diverse regions and must respond to different contextual pressures simultaneously to comply with international social standards or those adopted by GVCs. Thus, the question is whether the Latin American multinational employee-centered welfare approach changed considering the internationalization of the companies. Therefore, this chapter analyzes four Latin American multinationals' annual or sustainability reports and explores how the company informs about their contribution to their employees' welfare. The analysis is carried out based on the cover letter of the companies' presidents and CEOs.

Next to this introduction, the chapter contains five additional parts. The following section presents a look at the reporting practice of Latin American companies. Then, the chapter briefly describes the two major reporting frameworks—GRI and GC. The fourth part analyses the contribution of four Latin American multinationals to the workers' welfare according to what their executives inform. Finally, the chapter offers concluding remarks.

11.2. A Look at Reporting in Latin America

Analyzing annual and sustainability reports is usual for management research in Latin America (e.g., Perez-Batres, Miller, and Pisani, 2010). Large multinational companies from advanced economies widely publish sustainability or CSR reports since it is considered a way to inform and communicate their social and environmental conservation actions to their primary stakeholders. In Latin America, this practice is relatively recent (Davila, 2019), although its growth is increasing (KPMG, 2020). The 2020 and 11th edition of the KPMG Survey of Sustainability Reporting includes the analysis of 5,200 corporate reports in 52 countries and jurisdictions. The survey focuses on three critical aspects of sustainability reporting: reporting on the risks of biodiversity loss, reporting on climate-related risk and carbon reduction, and reporting on the UN Sustainable Development Goals (SDGs). The survey found that 80 percent of the top 100 companies selected by their revenue issued a sustainability report. The survey also informs that the Latin American companies included in the 100 companies that issue a sustainability report increased to 87 percent in 2020 compared to 81 percent in 2017.

Additionally, all Mexican companies included in the 100-sample report on sustainability encompassing 100 percent in 2020 compared to 90 percent in 2017. Brazilian, Argentinian, Colombian, and Peruvian companies also stand out in the 2020 survey increasing their sustainability reporting from the 2017 survey. However, the Panamanian, Costa Rican, and Ecuadorian companies fall behind the global average sustainability reporting rates (KPMG, 2020).

One could expect that the degree of internationalization of the companies influences the issuing of sustainability or social reports, but the literature emphasizes contradictory results. On the one hand, studies show that governments with solid regulations and countries with more demanding customers require that foreign companies report their socioenvironmental activities through public reports (Lim & Tsutsui, 2011). On the other hand, Duran and Rodrigo (2018) did not find a significant relationship when analyzing Latin American companies. The authors measured the degree of internationalization in terms of exports. Thus, the suggestion here is to measure this variable as the number of international operations in which the company becomes a corporate citizen and participates in GVCs. In this vein, the determinants of non-financial disclosure in Latin American companies were firm size, market-to-book ratio, systematic risk, and industry membership (Duran & Rodrigo, 2018). Regarding industry membership, Duran and Rodrigo (2018) found that companies in industrial sectors with a higher risk of socioenvironmental damage tend to perceive intense stakeholder pressures to report on their ecological actions and social practices to protect or compensate for the community's affections. Therefore, they issue sustainability reports targeting those stakeholders.

The G250 refers to the world's 250 largest companies by revenue as defined in the Fortune 500 ranking of 2019. Large global companies are typically leaders in sustainability reporting, and their reporting adopts mainstream trends. KPMG maintains that large firms around the world almost universally adopt sustainability reporting. This practice implies that companies follow global norms for sustainable actions and accept the practice of reporting them. However, KPMG experts on environmental, social, and governance (ESG) and sustainability services advise companies that do not have the practice of reporting on their sustainability actions that it is not an easy task. Reporting standards are dynamic, and the company needs to develop reporting expertise while acquiring knowledge about reporting governance from international agencies or institutions (KPMG, 2020).

KPMG (2020) identifies various international agencies and institutions that promote specific frameworks, standards, and measurements for non-financial actions that conform to sustainability reporting governance. There are, for example, the European Union (EU), the World Economic Forum (WEF), the Global Reporting Initiative (GRI), and more specific industrial associations, among others. In addition, governmental agencies, or financial stakeholders (e.g., the country's stock exchange market) make reporting in certain sustainability areas mandatory. According to the KPMG expert in Mexico, the ESG disclosure and assurance in the country is a response to the pressures of the stock market demands that require companies to adhere to climate-related legal frameworks and standards, global reporting trends, and how they progress towards the sustainable development goals (SDGs). For example, Mexican law requires that companies report greenhouse gas (GHG) emissions. The KPMG (2020) survey informs that 59 percent of Mexican companies identified climate change as one of the main risks, and 71 percent reported their GHG emission reduction targets.

Another trend KPMG (2020) identified is the reports' labeling. Reports received and continue receiving various labels making it challenging to analyze over the years. For example, at the beginning of the reporting wave in Latin America, companies such as FEMSA (Mexican multinational – beverages and convenience stores) labeled its first report in 2005 as the 'Social Responsibility Report.' Then, in 2010 it changed the label to 'Sustainability Report' and, in 2013, started to publish another report called the 'Global Initiative Report.' The difficulty for research analysis arises when companies mix labels and content. For example, in 2018, FEMSA merged the Global Initiative Report with the Sustainability Content report publishing only one report. From that year on, FEMSA published one report labeled 'Sustainability Report' that includes the GRI standards scores of the company.

Another trend in labeling sustainability reports includes integrating both reports, the annual report that focuses on corporate performance and the sustainability report that focuses on the social and environmental performance of the company. That is the case of Grupo BIMBO (a Mexican multinational – bakery). This company made its annual reports available to the public in 1998, and in 2010 published one 'Sustainability Report.' Since then, the company has issued an 'Integrated Report' annually that includes the company's corporate and sustainability performance.

Finally, there is the underlying trend of assurance of the sustainability information provided by the company (KPMG, 2020). This trend includes the involvement of an independent third party that reviews and assures that the company follows the requirements of the standards criteria. The research literature identified three primary assurance providers in a sample Fortune Global 500 list in 2010: external accountant consultant companies, non-accounting consultant companies, and mixed auditing companies (Junior, Best, & Cotter, 2014).

In Mexico, Ernest & Young (EY), the well-known auditing consultant company, issues verification reports published at the end of the auditing sustainability reports. According to EY, the verification procedures focus on a) interviews with the individuals responsible for the information to understand the activities performed and the procedures used to gather the data; b) the review of the structure and content of the report following the GRI Standards; and c) understanding of the procedures used in compiling and consolidating quantitative and qualitative data, as well as their traceability (FEMSA, 2019). Another renowned verification world agency is Bureau Veritas, which offers auditing services on sustainability reports and quality, safety, environmental protection, and social responsibility practices (Bureau Veritas, 2022). In addition, some Latin American companies use a self-internal audit process to validate the qualitative and quantitative information of the sustainability report (e. g., Grupo BIMBO).

Regarding standards and guidance frameworks, the GRI standards continue to provide the dominant framework for reporting over other frameworks, such as those of the stock exchange markets or other institutions (KPMG, 2020).

11.3. Reporting framework

Today, the global reference for non-financial reporting is the GRI standards. Scholars compare these standards to the accounting principles widely accepted for financial reporting (Waddock, 2008). The following are the GRI standards and the principles of the United Nations Global Compact (UNGC).

The GRI standards framework guides voluntary corporate reports on sustainability. Although the GRI is a well-known organization, its institutionalization process passed through several milestones. GRI was founded in 1997, aiming to create the first accountability mechanism to ensure companies adhere to responsible environmental conduct principles. The underlying premise was to obtain the commitment of multiple stakeholders to develop a common language to help companies and organizations report their sustainability impacts. From the beginning, the United Nations (UN) environmental program supported the GRI, which later broadened to include social, economic, and governance issues. This partnering with the UN offered the legitimacy needed to obtain the support of various organizations and individuals to finance and develop the technical side of the guidelines (Levy, Szejnwald Brown, & De Jong, 2010).

The GRI provided three versions of what was then known as guidelines and later introduced as GRI Standards. The first GRI Guidelines (G1), published in 2000, sought to provide the first global framework for sustainability reporting. Then, in 2002 and 2006, GRI launched the G2 and G3 versions of the guidelines. Finally, in 2016 GRI conducted a public consultation and in-depth stakeholder workshops worldwide, obtaining the G4 Standards. As a result, the GRI Standards include three Universal Standards applicable to all organizations. There are, for example, the requirements and principles of reporting and the organization's profile aiming to understand its context and impact. There is also a standard on how the organization can determine the material topics most relevant to its consequences.

GRI classifies the universal standards, numbering them into a series of 100s. Therefore, guideline 101 is the starting point for using the GRI Standards. The 102 guidelines include contextual information about an organization, and the 103 consists of the management approach for each material topic (GRI, 2022a). Then, forty types of sector standards guide the organization to report specific material in each sector. Oil and gas, agriculture, aquaculture, and fishing are sectors with the highest impact that have a particular standard. Organizations can use sector-specific evidence, international instruments, or advice from sector experts to prepare the report. The purpose is to reflect the expectations of a wide range of stakeholders regarding managing the impacts in the sector. Next are the GRI Topic Standards that provide information on how to report on specific economic, environmental, and social issues. The topics are in three series: 200s correspond to economic subjects, 300s cover the environment, and 400s deal with social issues, including matters related to the employee and employment. What is essential here is to report on how the organizations manage those topics' impact (GRI, 2022a).

The GRI 401 standard requires the organization to report its employment approach on hiring, recruitment, retention, and related practices and the general working conditions for employees. This standard also expects the organization to include employment and working conditions in its supply chain. The GRI 401 standard demands more specific policies and practices for disclosure, but it generally covers all the International Labor Organization (ILO) recommendations regarding decent jobs.

The GRI 414 Supplier Social Assessment standard requires that companies report on the systems used to screen new suppliers using social criteria. In addition, the standards stress that the company informs on the actions taken to prevent, mitigate, or remediate any potential negative social impacts identified in the supply chain. Thus, the challenge for any company here is to include employment and a decent job approach as part of the social criteria for assessing supply chain actors.

11.3.1. The UN Global Compact

The UNGC is an initiative based on the CEOs' commitment to implement universal sustainability principles in their companies and support the UN goals (UN Global Compact, 2022a). In 2005, the late UN Secretary-General Kofi Annan introduced this initiative with the participation of various stakeholders, including governments, local networks, and academics. Since then, there have been reviews on the governance of this initiative aiming to reach the UN 2030 Agenda for Sustainable Development (UN Global Compact, 2022a).

The UNGC encourages companies to reflect on their value system and business principles. The underlying assumption is that companies meet the minimum and fundamental human rights, labor, environment, and anti-corruption responsibilities. The UNGC understands that responsible businesses enact the same values and principles wherever they have a presence and knows that good practices in one area do not offset harm in another. The purpose is for companies to incorporate the Ten Principles of the UNGC into the company strategies, policies, and procedures and establish a culture of integrity (UN Global Compact, 2022b).

The Ten Principles of the UNGC incorporate fundamental elements of the Universal Declaration of Human Rights, the International Labor Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption. Therefore, the Principles address issues in the areas of Human Rights, Labor, Environment, and Anti-Corruption (UN Global Compact, 2022b).

Regarding the GVC perspective on sustainability performance, the UNGC acknowledges the challenges of extending the UN Global Compact's Ten Principles into a company's supply chain because of the scale and complexity of many supply chains (UN Global Compact, 2022c). For this reason, the UNGC Global Compact supports companies with various practical guide tools to develop more sustainable supply chain practices, such as Decent Work Toolkit for Sustainable Procurement, the Guide to Traceability, and the Practical Guide for Continuous Improvement. However, the UNGC's main advice is that top management commits to making the supply chain an extension of their workforce and community. This commitment will facilitate the company's sharing of best practices across the supply chain (UN Global Compact, 2022c).

Scholars stress the difference in compliance between the GRI Standards and the UNGC, emphasizing that in the latter, the only requirement is a company letter expressing commitment to the UNGC principles (Lim & Tsutsui, 2011). Additionally, the UNGC relies on corporations' self-reporting and voluntary monitoring by civil society. It does not monitor or certify companies (Lim & Tsutsui, 2011). Moreover, UNGC expects companies to report their progress toward the UNGC principles periodically. In contrast to the GRI Standards, which include detailed and rigorous indicators that target companies' performance on sustainable issues (Lim & Tsutsui, 2011). The research concludes that corporations in developing countries are more likely to present their GRI report due to the pressures of local governments and non-governmental agencies (Lim & Tsutsui, 2011). In Latin America, large firms follow GRI guidelines and tend to commit to the Global Compact (GC) mainly because of environmental pressures (Perez-Batres et al. 2010).

11.3.2. The MERCO Responsibility ESG Ranking

The multinationals analyzed in this chapter come from MERCO's corporate ranking on ESG Responsibility of large regional The multinationals analyzed in this chapter come from MERCO's corporate ranking on ESG Responsibility of large regional economies. Since 2000, MERCO has evaluated the reputation of companies in Latin America. It uses a multi-stakeholder methodology and more than twenty information sources (MERCO, 2022). In addition, KPMG audits all MERCO's rankings according to the International Standard on Assurance Engagements (ISAE) 3000 standard, which provides requirements and guidance on assurance engagements in various subject matters (ISAE, 2022). The ESG Responsibility ranking includes all major companies operating in each country, national and international. For this study, the selected companies were from the biggest economies in the region and scored the highest among the Latin American companies. The companies are: ARCOR (Argentina), Grupo JBS (Brazil), Concha y Toro (Chile), Grupo Bimbo (Mexico). Table 11.1 shows the inventory of the annual or sustainability reports analyzed.

Methodologists consider corporate reports a primary data source because these documents offer multiple details on the actors' names, specific events or activities, statements by senior executives, and descriptions of operations and products, among other topics (Yin, 2015). Moreover, because the cover letter of the companies' presidents or CEOs summarizes the company's primary practices in a specific year, its analysis is a usual research strategy. The present analysis takes a five-year cross-sectional approach for each company following the different versions of the GRI guidelines and standards.

Table 11.1. Inventory of Corporate Reports

Company	Country of Origin	Main Economic Sector	Year of the Report	Title of the Report	Number of Employees	GRI	Global Compact	International Production Plants (Countries)
ARCOR	Argentina	Consumer Food	2000	NA[41]	NA	NA	NA	NA
			2002	NA	NA	NA	NA	NA
			2006	Sustainability*	19,962	----	√	5
			2013	Sustainability*	20,000	√	√	5
			2016	Sustainability	21,000	----	√	5
			2021	Sustainability*	20,000	√	√	5
Grupo JBS	Brazil	Food Production	2000	NA	NA	NA	NA	NA
			2002	NA	NA	NA	NA	NA
			2006	NA	NA	NA	NA	NA
			2013	Annual and Sustainability	+185,000	√	----	22
			2016	Annual and Sustainability	237,061	√	----	+20
			2021	Annual and Sustainability◊	250,000	√	----	+20
Concha y Toro	Chile	Winery	2000	NA	NA	NA	NA	NA
			2002	NA	NA	NA	NA	NA
			2006	NA	NA	NA	NA	NA
			2013	Sustainability	2,892	√	√	4
			2016	Sustainability	4,779	√	√	4
			2021	NA	NA	NA	NA	NA
Grupo Bimbo	Mexico	Baking	2000	Annual Report	60,000	----	----	15
			2002	Annual Report	72,000	----	----	14
			2006	Annual Report	85,000	----	----	18
			2013	Annual Report	125,000	----	√	19
			2016	Integrated Annual Report	130,913	√	√	22
			2021	Integrated Annual Report	137,000	√	√	33

Source: Arcor's Sustainability Reports 2006, 2013, 2016, and 2021; Grupo JBS Annual and Sustainability Reports 2013, 2016, and 2021; Concha y Toro 2013 and 2016 Sustainability Reports; Grupo Bimbo's Annual Reports 2000, 2002, 2006, 2013, and Integrated Annual Reports 2016, 2021.

11.3.3. Evolution and Transformation of Workers' Welfare Approach

Before presenting the findings, it is interesting to point out a few observations. First, the inventory of the sustainability reports (see Table 11.1) indicates that three of the four companies published the report in the second decade of the 21st Century. One interpretation of this action could be the lack of international environmental pressures to issue such a report. The four companies are in the food sector. They thus might be seen as companies with low environmental risk even though food production involves many natural resources in the transformation processes. Another interpretation might be related to the late adherence of these companies to the global sustainability movement.

Regarding the findings, the four companies changed the label of the report, as KPMG (2020) identified in the analysis above. Even though the cover letter does not highlight the report's sustainability framework, most companies followed the GRI Standards (see Table 11.1). Moreover, the cover letter included some themes regarding employment, but in one year, the four companies' cover letters did not deal with employment-related issues. Only a few reports included suppliers to highlight their compliance with the code of ethics. Further analysis of the report's content could offer data on the company's participation in assessing the social aspects of its supply chains. However, the report's content analysis is beyond the purpose of this chapter.

Findings indicate two significant dimensions emerging in the analysis of the cover letters (see Figure 11.1). First, presidents and sustainability directors address their employees' skills and knowledge about diversity, inclusion, gender equality, and ethics. Such actions were under the sustainability label because of their close association with the global human rights movement. The letters also highlighted the company's practices related to developing employees' leadership skills associated with the company's performance. Second, these two dimensions have specific actions, but both have in common that the letters stressed the introduction of sustainability goals in the employees' performance management systems.

Although the cover letters made a few remarks regarding suppliers, they were related to making the suppliers comply with the company's code of ethics. Unfortunately, data on suppliers was minimal, and challenging to connect to the suppliers' employees' welfare.

[41] NA: Not Available
* In Spanish
◊ In Portuguese

The content of Arcor's statements about employees and job-related themes changed over the years analyzed. In 2006, the focus was to enhance the company's commitment to its social responsibility, highlighting job creation with a focus on its performance. Thus, the commitments were:

- "To grow according to a geographical location model that privileges remote areas or areas with less generation of employment.
- To promote the work culture and invest heavily in developing its 20,000 workers – Arcor is one of the Latin American industrial groups that generate the most employment – of different nationalities, cultures, and customs.
- To develop its operations under strict criteria of job safety."

In the same year, Arcor stressed the employees' training in ethics and how the company redesigned the performance management systems to include transparency in job evaluations. In 2013 the company introduced a gender equality project and changed the performance management system to comprise sustainability goals for individuals to contribute. In addition, the company trained employees on human rights and emphasized hiring individuals with disabilities. From this year on, the statements included in the cover letter informed about the same themes: preserving jobs, creating a performance management system with sustainability goals, human rights, and training on gender equality, inclusion, and diversity.

In 2013 Concha y Toro reported good labor relations and low rates of work accidents in the winery. Although the company recognized the challenges of labor relations, the themes in the statements corresponded more to enhancing employee competitiveness and the company's good performance. However, from this year on, there were no further statements on these issues.

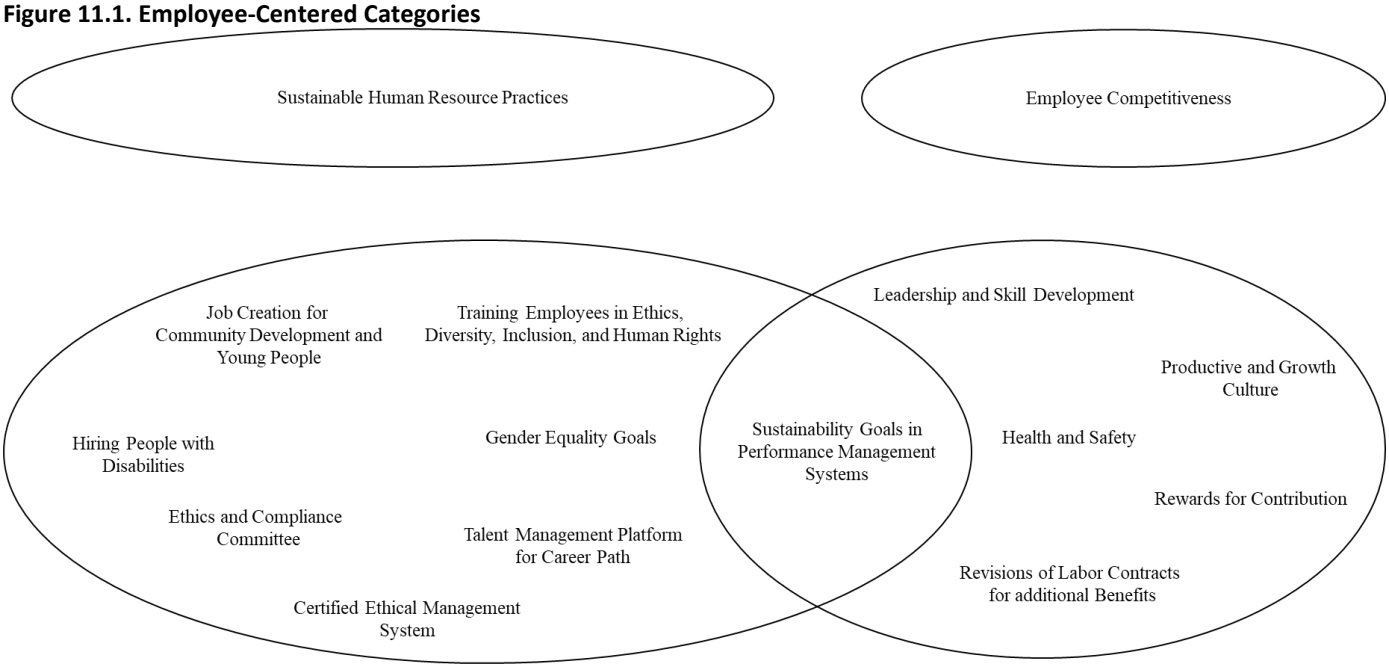
In 2013 the JBS' annual and sustainability report included a statement of gratitude towards its employees concerning their competitiveness. It reads:

> *"I would like to thank each of our 185 thousand team members. Because of these people's dedication, JBS continues growing and reaching greater targets. Our team is made of highly qualified individuals who understand our business and embrace our values and culture daily in each country where we operate. These people are down to earth with an attitude of ownership. They lead by example, thus preserving the essence of our company. So, I want to say thank you and tell you I am proud to be alongside people who are proud to be part of a JBS that improves by the day."*

In 2021 the cover letter thanked the employees again and highlighted the focus on having the best employees in the right place aligned with the culture and values of the company.

In 2000, Grupo Bimbo stressed the success of the collective labor contract, the training, and the focus on leadership skill development. From that year on, the company emphasized the actions and practices that enhanced employee competitiveness. Examples are productivity and growth culture, talent management platform, ethics, diversity, and inclusion training. In the 2021 report, the cover letter of Grupo Bimbo was the only company of the four analyzed in this chapter that sent a message of condolences to the employees and families of victims of Covid in that year.

Figure 11.1. Employee-Centered Categories



Source: Based on Annual/Sustainability Reports of Arcor, Concha y Toro, Grupo Bimbo, and Grupo JBS.

11.3.4. Concluding Remarks

The purpose of the chapter was to answer the question of whether the Latin American multinational employee-centered welfare approach changed because of the internationalization of the companies. The study's background traces Latin American companies' commitment to developing their employees, families, and surrounding communities early in the XX century. As large Latin American companies internationalize, they learn to comply with international standards. Therefore, the companies might encounter tensions in reporting social practices towards their employees and related stakeholders and what the international standards require. Thus, it is crucial to understand the changes in the employee-centered welfare approach and the role of environmental pressures such as reporting sustainability practices and actions.

Analyzing the cover letter of the annual and sustainability reports in a cross-sectional timeline offered actions and practices that are important for the company's top management and the changes made over the years. In addition, this methodological strategy helped to identify those changes.

The analysis identified a late entrance to the publishing of sustainability reports global movement. In addition, the employee-centered approach received few entries in the report's cover letter. This action might indicate one of the tensions perceived by the company. That is, there are so many issues related to sustainability that the ones associated with the welfare of the employees and related stakeholders receive little attention from the president of the board or CEOs.

When one compares the statements published over the years, one can observe how the companies describe their employee-centered practices using the language of sustainability and competitiveness. For example, some companies use the human rights framework to stress ethics, diversity, gender equality, and inclusion training. However, cover letters paid more attention to those practices related to enhancing the employees' competitiveness—for example, the emphasis on performance management systems, productivity, company growth, or collective agreements.

Although the cover letters missed the companies' actions related to their relationship with their GVC and their approach to their employees' welfare, one can assume that the parent company does not exert pressure to adopt such an approach. Over the years, the companies analyzed in this chapter adopted GRI or GC reporting frameworks. This action might indicate that there are elements in the environment that make these companies comply with those frameworks. This conjecture is an early conclusion but could be the path that future studies on Latin American companies will take.

References

Bureau Veritas (2022). Home – Group. Retrieved on June 20, 2022, through https://group.bureauveritas.com/group

Davila, A. (2021a). How Mexican companies contribute to human development (pp. 211-224). In J. Marques (Ed.). Business with a Conscience: A Routledge Research Companion. London: Routledge.

Davila, A. (2021b). How socially responsible HRM should be understood in Latin America (pp. 78-95). In J. Trullen and J. Bonache (Eds.). Talent Management in Latin America: Pressing Issues and Best Practice. London: Routledge.

Davila, A (2019). Cambios en el pensamiento empresarial latinoamericano sobre responsabilidad social debido a la internacionalización de las grandes empresas [Changes in the Latin American business thought on social responsibility due to the internationalization of large companies]. In R. Giacalone (Ed.), El Pensamiento

Empresarial Latinoamericano en el Siglo XXI [Latin American Business Thought in the 21st Century] (pp. 43-64). Bogotá, Colombia: Ediciones Universidad Cooperativa de Colombia.
Duran, I.J., & Rodrigo P. (2018). Why do firms in emerging markets report? A stakeholder theory approach to study the determinants of non-financial disclosure in Latin America. Sustainability, 10(9), 3111-3121.
GRI (2022). About GRI. Retrieved on June 22, 2022, through https://www.globalreporting.org/about-gri/
GRI (2022a). A Short Introduction to the GRI Standards. Retrieved on June 23, 2022, through https://www.globalreporting.org/standards/standards-development/universal-standards/
ISAE (2022). ISAE 3000 (Revised), assurance engagements other than audits or reviews of historical financial information. Retrieved on June 30, 2022, through https://www.iaasb.org/publications/isae-3000-revised-assurance-engagements-other-audits-or-reviews-historical-financial-information
Junior, R. M., Best, P. J., & Cotter, J. (2014). Sustainability reporting and assurance: A historical analysis on a worldwide phenomenon. Journal of Business Ethics, 120(1), 1-11.
KPMG (2020). The time has come. The KPMG survey of sustainability reporting 2020. Retrieved on June 6, 2022, through https://home.kpmg/xx/en/home/insights/2020/11/the-time-has-come-survey-of-sustainability-reporting.html
Levy, D. L., Szejnwald Brown, H., & De Jong, M. (2010). The contested politics of corporate governance: The case of the global reporting initiative. Business & Society, 49(1), 88-115.
Lim, A., & Tsutsui, K. (2011). Globalization and commitment in corporate social responsibility: Cross-national analyses of institutional and political-economy effect. American Sociological Review, 77(1), 69-98.
Logsdon, J. M., Thomas, D. E. & Van Buren III, H. J. (2006). Corporate social responsibility in large Mexican firms. Journal of Corporate Citizenship, 21, 51-60.
MERCO (2022). What is Merco? Retrieved on June 30, 2022, through https://www.merco.info/mx/que-es-merco#
Batres, L., Miller, V. V., & Pisani, M. J. (2010). CSR, sustainability and the meaning of global reporting for Latin American corporations. Journal of Business Ethics, 91, 193–209.
Rojas Sandoval, J. (1997). Fábricas pioneras de la industria en Nuevo León [Pioneer industry factories in the state of Nuevo Leon]. Monterrey, Mexico: UANL Press.
Salas-Porras, A. (2001a). Corrientes de pensamiento empresarial en México (primera parte) (Streams of entreprenurial thought in Mexico, part one). Revista Mexicana de Ciencias Políticas y Sociales, 44(181), 181-210.
Salas-Porras, A. (2001b). Corrientes de pensamiento empresarial en México (segunda parte) (Streams of entreprenurial thought in Mexico, part two). Revista Mexicana de Ciencias Políticas y Sociales, 44(183), 227-257.
Saragoza, A. M. (1988). The Monterrey elite and the Mexican state, 1880-1940. Austin, TX: University of Texas Press.
Schneider, B. R. (2013). Hierarchical capitalism in Latin America. Business, labor, and the challenges of equitable development. NY: Cambridge University Press.
UN Global Compact (2022a). About. Retrieved on June 28, 2022, through https://www.unglobalcompact.org/about
UN Global Compact (2022b). The ten principles of the UN Global Compact. Retrieved on June 28, 2022, through https://www.unglobalcompact.org/what-is-gc/mission/principles
UN Global Compact (2022c). Supply Chain Sustainability. Retrieved on October 19, 2022, through https://www.unglobalcompact.org/what-is-gc/our-work/supply-chain
Waddock, S. (2008). Building a new institutional infrastructure for corporate responsibility. Academy of Management Perspectives, 22(3), 87–108.
Yin, R. K. (2015). Qualitative research from start to finish. NY: The Guilford Press.

Chapter 12

INVESTMENT AMIDST POLITICAL TURMOIL: MNC R&D ACTIVITY IN THAILAND

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Executive Summary

In this chapter, we explore how multinationals (MNCs) invest in R&D amidst political turmoil. We focus our inquiry on the case of Thailand. The country is an illustrative case for such activity because despite having numerous coups, the country has also simultaneously experienced significant economic growth. Using a government survey of R&D spending collected amidst the most recent 2014 Thai military coup d'état, we obtain descriptive insights into the country's MNC landscape, MNC R&D investment tactics amidst the coup, and sectors where such investment are mostly likely to take place. More specifically, we find that Japan is the most active in the Thai MNC landscape. We also find that MNCs are associated with increased R&D spending following the coup, though at a lower rate than domestic firms. We also find this increase is largely attributed to MNCs from G7 countries, whereby Japan-based MNCs seem the first to act, followed more slowly by other G7 countries. While MNCs tend to invest in more variable R&D spending (both pre-and post-coup) and in more high-tech sectors (especially post-coup), MNCs from countries whose business cultures are more politically oriented tend to invest less in R&D post-coup. We conclude with potential areas of future inquiry that we hope can be spurred from this exploratory, agenda-setting chapter.

Keywords: Research and Development, R&D, Thailand, multinationals, G7, business culture, political turmoil

12.1. Introduction

Thailand is one of the E20+1 emerging market countries. Economically, the country had grown and achieved high economic growth rates between 1965 and 1990. So much so, Thailand is considered one of the eight "East Asian Miracles", along with Japan, South Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Indonesia (Campos & Root, 2001). Thailand's largest company (PTT Company Limited) is listed in the Fortune 500 and attracts significant foreign direct investment (FDI) and continues to be one of Southeast Asia's major FDI destinations (Frost & Ho, 2005).

Yet simultaneously amidst such growth, Thailand also has experienced frequent military coup d'états. Coups are defined as events whereby a political faction within the state aims to overthrow the chief executive (Powell & Thyne, 2011). Since 1932, when the political system changed from an absolute to a constitutional monarchy, Thailand has experienced 12 successful coups and 7 unsuccessful attempts. To be clear, a successful coup is simply defined as whether the coup resulted in an overthrowal of the existing government. Success is not used normatively here to imply the triumph of a specific ideology or value system. Some analysts have argued that Thailand is the most coup-prone country in the world (Fisher, 2013; Stout, 2014), often chronicling this period since 1932 as the "coup season" in the country (Sirikantraporn & Taephant, 2020).[42]

How then can we explain such foreign investment and growth amidst such frequent political turmoil? While prior studies would suggest such turmoil would hamper innovation and investment (e.g., Agarwal & Ramaswami, 1992; Allard, Martinez, & Williams, 2012), Thailand seems counter to this thinking. Moreover, this counterintuitive insight may not be confined just to Thailand. According to the Institute of Economics & Peace (2021), approximately $14.4 trillion, or over 10% of the world's GDP comes from areas of civil unrest. Arguably then, exploring how multinational corporations (MNCs) invest in R&D and innovate amidst such unrest in Thailand can serve as an "extreme case" to better understand this arguably more general phenomenon (Stinchcombe, 2005).

This chapter will therefore use R&D survey data to understand how MNCs make R&D investment decisions amidst political disturbances in Thailand. Our aim here is to write a more exploratory, agenda-setting chapter on the role of political turmoil in

[42] The 12th was the 2014 military coup (and a potentially a 13th one is currently potentially occurring - https://www.aljazeera.com/news/2022/8/24/thai-court-to-rule-on-prayuths-term-limits-as-protests-continue), and other counts suggest that it is up to nine unsuccessful attempts (see: https://www.newmandala.org/counting-thailands-coups/). All articles accessed 19 September 2022.

R&D investment that goes beyond the current dearth of studies on this topic to date (e.g., Atanassov, Julio, & Leng, 2015; Pertuze, Reyes, Vassolo, & Olivares, 2019, for very rare exceptions). We, therefore, hope this work can spur greater attention to this critical gap in our understanding as a more nuanced focus on political unrest in emerging markets can arguably advance more realistic and precise insights into such markets.

12.2. Empirical Context: 2014 Thai Military Coup d'État

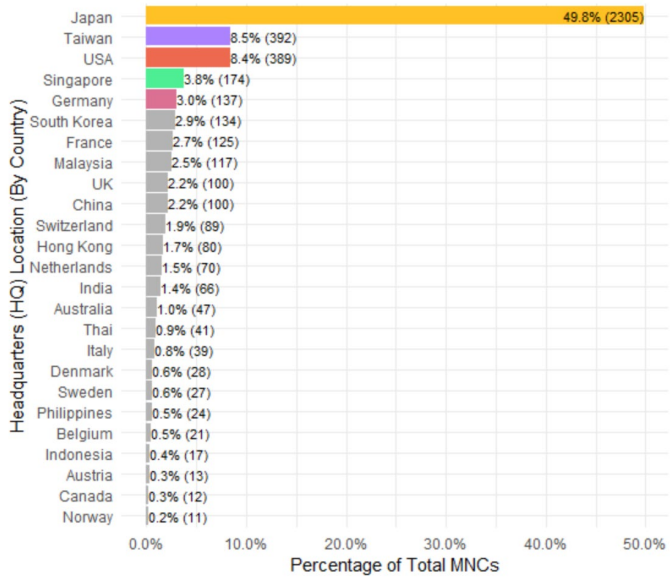
For this chapter, we will focus on MNC activity during the 2014 Thai military coup, the most recent completed coup in the country's history. This coup stemmed from a struggle between the rural (more pro-government) and urban (more anti-government) populations of Thailand that aligned with different political parties. The coup in 2006 overthrew the incumbent prime minister, Thaksin Shinawatra. However, his supporters and influence remained strong. This led to his sister, Yingluck, being elected as Prime Minister in 2011. During her term, political protests and unrest grew especially with news of a proposed amnesty bill that would pardon her brother. Despite dissolving the parliament and the Constitutional Court's involvement, protest and violence remained. In May 2014, the military declared martial law and later launched a coup d'état.

While the coup and the interim military government, the National Council for Peace and Order (NCPO), ended the protest and violence, uncertainty remained about how and when Thailand would return to a democratic government. A new constitution was drafted 2 years after the military stepped in. It was only ratified in 2017, and an election was not held until 2019. Even after the 2019 election, the military remained a strong influence on the government. While the coup resolved short-term uncertainty (i.e., protests), long-term uncertainties remained (i.e., constitutional and election timetables). One scholar succinctly captured this post-coup period as "stability without certainties" (Busbarat, 2018)

12.3. Descriptive Insight #1: Japanese-based MNCs comprise the majority of MNCs engaged in R&D

The remainder of this chapter uses data from Thailand's R&D Innovation Survey (RDI), which is an anonymized annual survey of R&D spending and innovation activities of firms operating in Thailand (see Appendix for details as to the survey methodology and diagnostics). Figure 12.1 illustrates the distribution of MNCs based on country headquarters (HQ) location. We see that Japan has the most MNCs in Thailand, followed by Taiwan, the USA, Singapore, and Germany. While this could reflect those willing to answer the RDI survey, this also reflects OECD analysis of general Thai foreign direct investment (FDI) inflow data, whereby Japan also leads. They chronicle that 41% of all FDI inflows into Thailand come from Japan (USA, Taiwan, Singapore, and Germany similarly within top investors though in a slightly different order) (OECD, 2021). This mirrors quite closely the percentage of Japanese MNCs by HQ location in Figure 12.1 at 49%. This suggests that the RDI seems to representatively capture similar R&D trends to that captured by other analyses of Thailand, and that MNCs are a key vehicle by which R&D investment occurs in the country.

Figure 12.1. Country Distribution of Multinational Firm Headquarters. Source: RDI



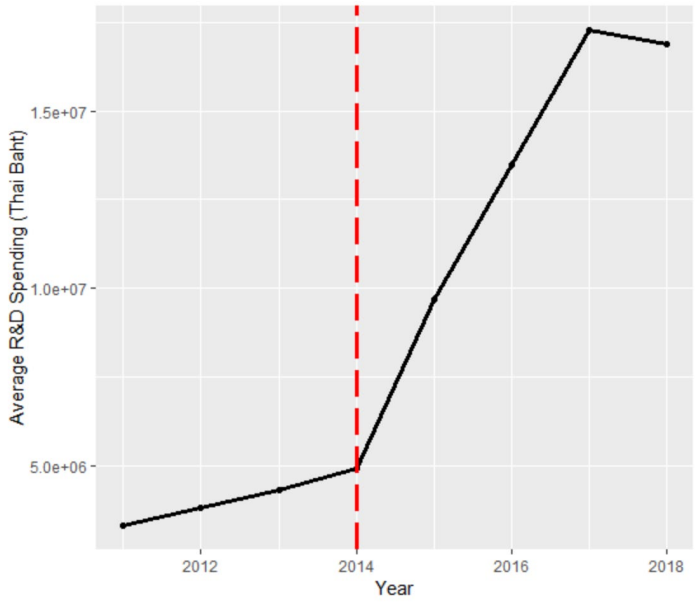
Source: Authors based on survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[43] known as the R&D and Innovation (RDI) survey

[43] This is now the National Science Technology and Innovation Policy Office of Thailand, which has been now reorganized as the Office of the National Higher Education, Science, Research and Innovation Policy Council (ONES).

12.4. Descriptive Insight #2: Post-Coup, all firms are associated with increases in R&D spending

Firm R&D expenditure is a key input that reflects the intention and commitment of firms to innovate. We use this variable to understand how the propensity of firms in Thailand to invest in innovation changes over time as the country goes through political changes. Figure 12.2 shows the average R&D spending by firms observed each year. We see that in the year 2014 (red dashed line signifying the coup), the average R&D spending of firms increases dramatically. Per Figure 12.2, the difference between 2012 and 2016 spending is 252%.

Figure 12.2. The Average Firm R&D Spending. Source: RDI



Note: (Missing values median imputed – see Appendix)
Source: Authors based on survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[44] known as the R&D and Innovation (RDI) survey

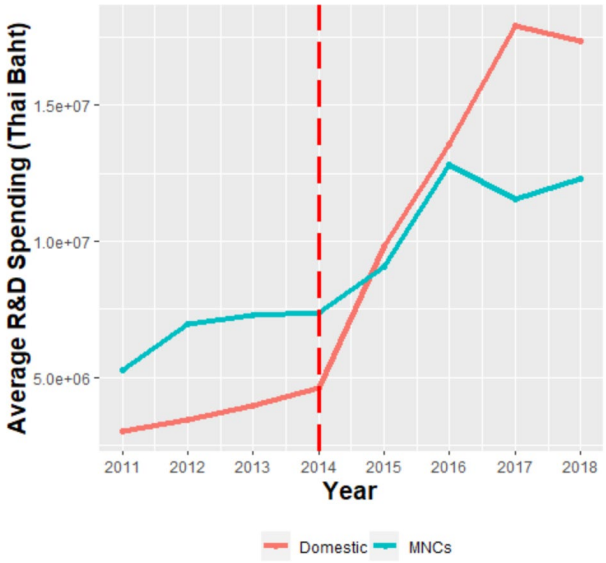
12.5. Descriptive Insight #3: Post-Coup, domestic firms are associated with more R&D spending than MNCs, though both are associated with increases.

To better understand the increasing trend in 2014, we consider whether MNCs and domestic firms increase their R&D expenditure similarly. In Figure 12.3 after the 2014 coup, we see that both MNCs and domestic firms increased R&D spending. However, while both domestic and MNC firms tracked similarly prior to the 2014 coup (with MNCs spending more), domestic firms overtake MNC firms to increase more drastically their R&D spending. More specifically, while MNCs increase R&D spending from 2012 to 2016 by 85%, domestic firms increase their spending by 294% for the same period.

There are several potential explanations for these trends. A more conventional explanation is that MNCs can divert risk by investing in other countries beyond Thailand, which domestic firms cannot do. In essence, when uncertainty increases, they can simply shift investment elsewhere. However, this does not explain increases in both, let alone the increased spending from domestic firms, especially given long-term uncertainty remains as to when constitutional and electoral processes would resume. An alternative explanation could be both MNCs and domestic firms recognize opportunities amidst the coup, but domestic firms perceive more such opportunities given their sole focus and grounding in the country.

[44] This is now the National Science Technology and Innovation Policy Office of Thailand, which has been now reorganized as the Office of the National Higher Education, Science, Research and Innovation Policy Council (ONES).

Figure 12.3. Average R&D spending by MNCs (green line) vs Domestic firms (red line). Source: RDI

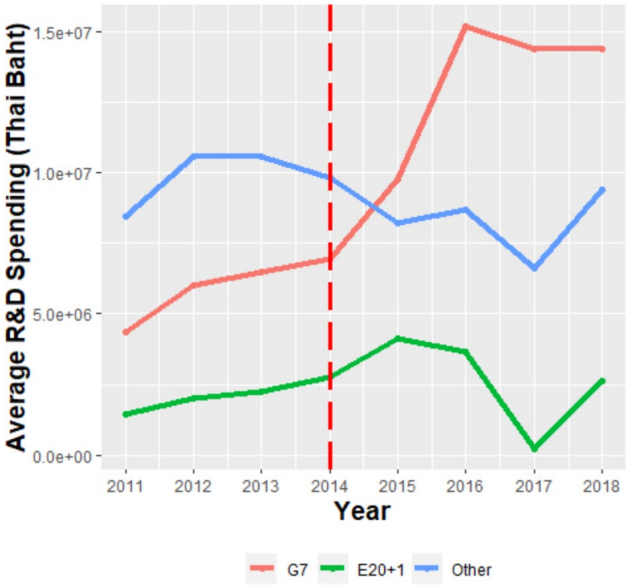


Source: Authors based on survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[45] known as the R&D and Innovation (RDI) survey

12.6. Descriptive Insight #4a: Post-Coup, those MNCs that are associated with the greatest increases in their R&D spending are from G7 countries

Now we turn to explore whether MNC R&D spending varies by HQ location. In particular, we look at investment difference based on whether the MNC's HQ is located in a G7 country, in a E20+1 country, or in another country. In Figure 12.4, we see that MNCs from G7 countries increase their R&D spending more noticeably after 2014, while those from other countries have generally lower R&D spending post-coup. More specifically, while G7 MNCs increase R&D spending from 2012 to 2016 by 154%, E20+1 MNCs increase their spending by 83% for the same period, and other MNCs decrease their spending for the same period. This suggests that MNCs with HQs in G7 countries have a greater ability to identify and commit to research and innovation opportunities in Thailand. This may be the result of MNCs from G7 countries investing more in R&D and, therefore, having more extensive experience in the local Thai context than MNCs from other countries.

Figure 12.4. Average R&D spending by MNCs headquartered in G7 (red line), E20+1 (green line), or Other (blue line). Source: RDI



Source: Authors based on survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[46] known as the R&D and Innovation (RDI) survey

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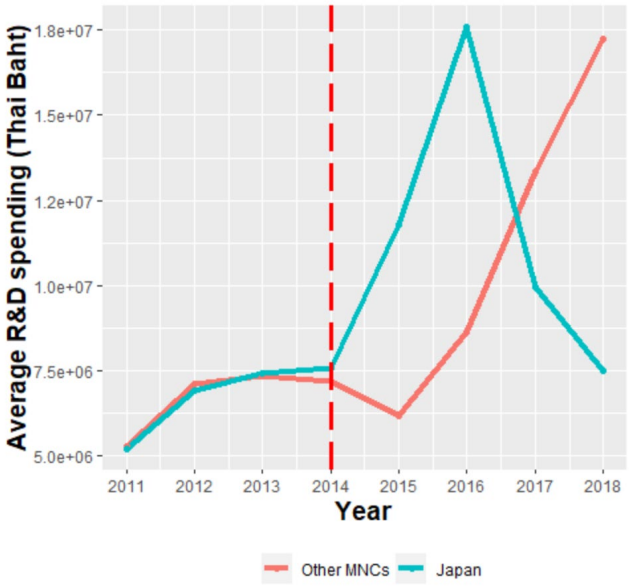
12.7. Descriptive Insight #4b: Post-Coup, Japanese MNCs are initially associated with increased R&D spending but then other G7 countries are associated with the subsequent ramp-up in their spending

Given Figure 12.1 informs us that R&D investment from Japan comprises most of the investment from G7 countries in Thailand, we then explore specifically Japan in relation to other countries. Figure 12.5 shows Japan exhibits a large increase in R&D spending after the military coup period. In comparison to Figure 12.4, this increase seems to greatly contribute to the jump we see for G7 countries. However, the level of R&D spending quickly dropped back to similar levels in 2017 and 2018. Given in Figure 12.4, R&D spending seems to remain at high levels for G7 countries from 2017-2018, this suggests that other G7 MNCs make up for the drop in Japanese MNCs' investment.

One possible explanation for these trends is that given Japanese MNCs invest the most in R&D in Thailand, they can recognize new investment opportunities quicker than MNCs from other countries. However, the significant drop in the level of investment from these Japanese MNCs in 2017-2018 also suggests that these MNCs may also more quickly reverse or reallocate such investment if the opportunity proves not as lucrative as anticipated. Based on commonly used cultural measures from Hofstede,[47] Japan is one of the most risk-averse and uncertainty-avoiding countries in the world. Given this aversion, the appetite for taking on risk for Japanese MNCs may be substantially limited and so this drop in investment levels may be an indicator of reversing or reallocating investment to manage risk. MNCs from other G7 countries may recognize opportunities but more slowly in lieu of their significant, though smaller, presence than Japan. Moreover, they may have less ability to identify where to make bets in a more short-term, reversible manner. This can lead to an approach of more slowly escalating their investments until there is greater stability in the Thai political system. How MNCs can manage risk through their R&D investments is the basis for the next descriptive insight.

Figure 12.5. Average R&D spending by Japanese MNCs (green line) vs. MNCs from other countries (red line). Source: RDI



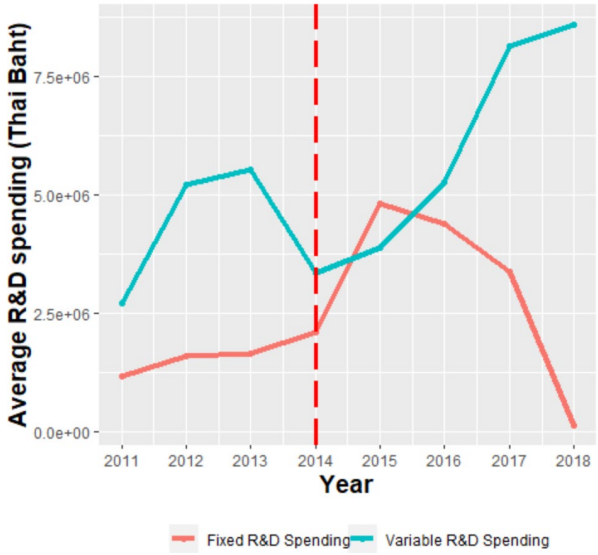
Source: Authors based on survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[48] known as the R&D and Innovation (RDI) survey

12.8. Descriptive Insight #5: Throughout the observed period (2011-2018), MNCs are usually associated with greater variable R&D than fixed R&D spending.

We now turn to tactics that MNCs use to invest in R&D amidst political turmoil. In particular, we look at whether they invest more in variable vs. fixed R&D. The RDI measures fixed spending as those R&D investments made in land, buildings, and durable goods (i.e., Machinery, Vehicles, and Software). The RDI measures variable spending as those R&D investments made on personnel and other expenses such as material and utility costs. The idea is that variable spending is easier to reverse than fixed R&D (Kallapur & Eldenburg, 2005), or that variable R&D assets are easier to redeploy into other productive channels (Sakhartov & Folta, 2014). In Figure 12.6, we see that MNCs seem to usually invest more in variable R&D spending. While fixed and variable R&D spending converged in the years just after the coup, MNCs invested drastically more in variable as opposed to fixed R&D spending in later years after the coup. This suggests that MNCs tend to de-risk R&D investments by making them more easily reversible or deployable, and this seems to have largely been unchanged (except for a couple of years immediately following the coup).

[47] See Hofstede's insights on Japan in particular here: https://www.hofstede-insights.com/country-comparison/japan/ (Accessed: 16 October 2022)
[48] This is now the National Science Technology and Innovation Policy Office of Thailand, which has been now reorganized as the Office of the National Higher Education, Science, Research and Innovation Policy Council (ONES).

Figure 12.6. Average MNC R&D spending, split by fixed (red line) vs. variable (green line) R&D spending. Source: RDI



Source: Authors based on survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[49] known as the R&D and Innovation (RDI) survey

12.9. Descriptive Insight #6: Post-Coup, high-tech-oriented MNCs are associated with greater increases in their R&D spending than low-tech-oriented MNCs.

Exploring these MNC tactics further, we look at the industries in which these firms operate and use the OECD classification of high-tech industries to explore the difference in R&D spending behavior (Galindo-Rueda & Verger, 2016). We see in Figure 12.7 that MNCs operating in high-tech industries increase their R&D spending quickly post-coup, while less high-tech MNCs increase R&D spending but do so later (2 years after the coup) and less intensely. This suggests that high-tech sectors may offer greater returns from R&D and so more investment increases in these sectors as opposed to others. For low-tech sectors, there are potential returns from process advancements, but these are more marginal returns than in high-tech industries where knowledge and technological innovation are key sources of competitive advantage.

Figure 12.7. Average R&D spending by high-tech MNCs (green line) compared to less high-tech MNCs (red line). Source: RDI

Source: Authors based on survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[50] known as the R&D and Innovation (RDI) survey

[49] This is now the National Science Technology and Innovation Policy Office of Thailand, which has been now reorganized as the Office of the National Higher Education, Science, Research and Innovation Policy Council (ONES).

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12.10. Descriptive Insight #7: Less politically oriented MNCs are associated with greater increases in R&D investment than more politically oriented MNCs

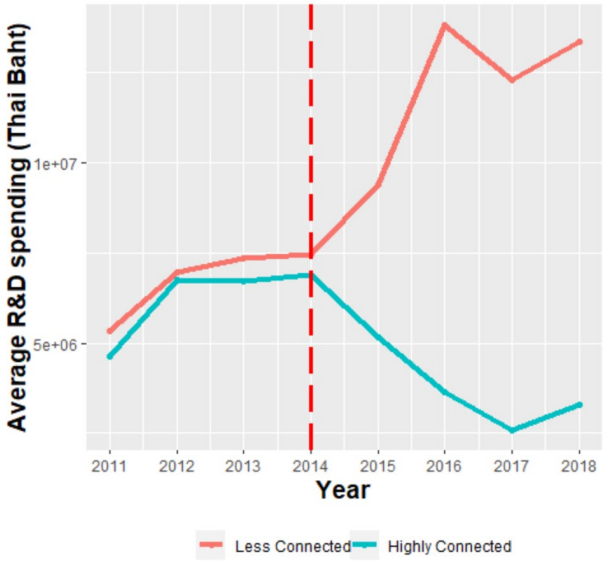
We now turn to better understanding how much of the change in R&D spending behavior is politically motivated. To measure such political orientation, we use two variables from Faccio (2006). The first is the percentage of firms connected with a government official. This is defined as whether one of the company's large shareholders or top officers are a member of parliament, minister, head of state, or relative of such officials. The second is the number of connected firms as a percentage of the country's market capitalization. We create two binary variables to classify those countries where these variables exceed 5%. In our case and according to Faccio (2006), Indonesia, Italy, Malaysia, Thailand, Mexico, Russia, Singapore, and the UK all have more than 5% of firms connected to member of parliament, minister, head of state, or relative of such officials. When also looking at connections based on market capitalization, the list grows to include Belgium, France, Ireland, Israel, Luxembourg, the Philippines, South Korea, and Taiwan.

The idea in coding this variable is to ascertain countries whose MNCs may have a proclivity to identify opportunities through engaging in political relationships. According to Faccio (2006), Thailand has 8.24% of firms connected with a minister or MP and 41.62% connected firms as a percentage of the market capitalization. This implies that such a politically oriented strategy may align with the local Thai context.

In Figure 12.8 and Figure 12.9, we see that firms from countries that have similarly high levels of political connection decreased R&D spending drastically following the Thai military coup. However, those MNCs from countries with less widespread political connections increased R&D spending. Japan, which has low levels of political connection between government and firms, may play an outsized role in driving the trend of increased R&D spending post-coup for the less politically connected group. What this suggests is that a more politically oriented strategy may not be as useful amidst a political system in flux; maintaining such ties are costly and the insights are ephemeral at best. Moreover, engaging in such a strategy amidst a system that is now being questioned may also create reputational costs. Such an insight resonates with findings from other studies regarding political orientation amidst political unrest (Acemoglu, Hassan, & Tahoun, 2018; Leuz & Oberholzer-Gee, 2006; Siegel, 2007), and we bring this insight into the context of R&D investment. However, to more definitively ascertain whether this is the case, we would likely need to collect more detailed qualitative data on each MNC's R&D activities and their basis via news articles, company announcements, and interviews with key company stakeholders.

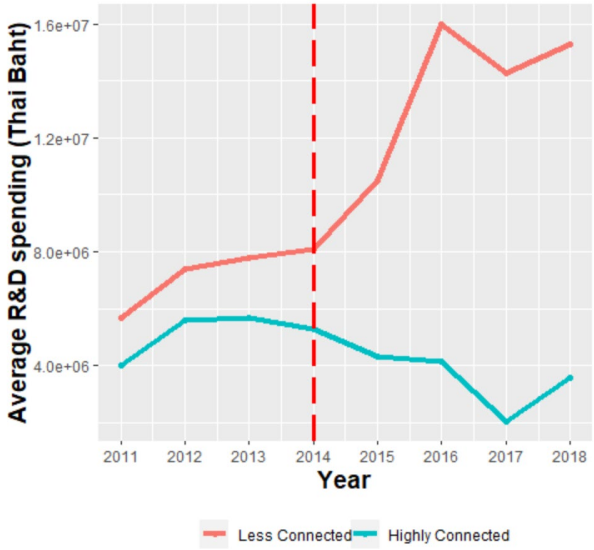
While Faccio (2006) is a well-respected source used by many recent studies, we recognize that, as far as we are aware, this data source has not been updated since 2006. Thus, given we are using data from 2011-2018, we advise that the reader interprets these results with caution and only as descriptive findings that are designed to incite further inquiry and exploration.

Figure 12.8. Comparison of the MNCs from countries with high (green line) and low (red line) percentages of firms connected to government officials



Note: The treatment includes MNCs from Indonesia, Italy, Malaysia, Thailand, Mexico, Russia, Singapore, and the UK.
Source: RDI and classification scheme comes from Faccio (2006)

Figure 12.9. Comparison of the MNCs from countries with high (green line) and low (red line) numbers of connected firms as a percentage of market capitalization



Note: The treatment includes MNCs from Figure 12.8 as well as Belgium, France, Ireland, Israel, Luxembourg, the Philippines, South Korea, and Taiwan.
Source: RDI for the data and classification scheme comes from Faccio (2006)

12.11. Summary of Descriptive Results

Regarding the MNC landscape in Thailand, nearly half of the MNCs are from Japan; other members of the G7 (Germany and the U.S.), Taiwan, and Singapore have significant, though lesser, involvement. Following the Thai military coup in 2014, R&D investment increased, but more so for domestic firms. Within MNCs, the G7 had the most drastic increases in post-coup R&D investment. This seems to be explained via an initial short-term surge from Japanese-led MNCs and subsequently followed via a more long-term steady escalation of investment from the rest of the G7. Moreover, MNCs invest R&D in more high-tech than low-tech sectors and in more variable than fixed R&D channels; the former occurred much more so post-coup, while the latter occurred similarly pre- and post-coup. Finally, MNCs from countries with less politically oriented business cultures appear to invest more in R&D post-coup than those from countries with more politically oriented business cultures. Again, to be clear, these are descriptive, associative results intentionally designed to be exploratory and agenda-setting to incite further inquiry that brings greater nuance to the role of political turmoil on R&D.

12.12. Discussion

We see this chapter as motivating further research around R&D investment and innovation amidst political turmoil along several frontiers. First, we need to better understand how companies recognize investment opportunities amidst political turmoil. While we have greater understanding about opportunity recognition in stable political times, we have far less understanding about how this occurs amidst unstable periods. Those few studies to date that focus on recognition and learning amidst such rare events largely focus on natural disasters rather than politically motivated events (Maslach, Branzei, Rerup, & Zbaracki, 2018; Rerup, 2009; Rerup & Zbaracki, 2021). This omission is perplexing given the prevailing view that unexpected problems trigger the search for opportunities and solutions (Cyert & March, 1963; March, 1991; March & Simon, 1958), and encountering political unrest is clearly a very salient problem. Our chapter seems to suggest local familiarity and experience may matter in such processes. More specifically, domestic firms invest more in R&D than MNCs. Of those MNCs that do invest, most of those MNCs are those with more intense presence in Thailand (i.e., Japan). Other MNCs with significant, though less presence (i.e., other G7 countries) seem to also identify opportunities but slower. An important step is to probe deeper into understanding how precisely such firms recognize these opportunities for R&D investment amidst civil unrest. More specifically, what capabilities and tactics are needed to recognize opportunities and whether those recognized opportunities even prove successful are all important unknowns for which we need better answers.

Second, we need to better understand how companies de-risk investments amidst political turmoil. Prior studies do not adequately distinguish between different types of political uncertainty. They tend to lump together everything from coups to election cycles into a single policy uncertainty measure as if they all measure the same thing (e.g., Agarwal & Ramaswami, 1992; Allard et al., 2012). What our chapter suggests is that amidst military coups, firms invest in more variable R&D that can be reversible and do so in more high-tech sectors where there is potential for greater returns. This seems to help balance the greater short-term certainty that coups provide (i.e., ending protests) with the long-term uncertainty that remains (i.e., unclear constitutional and election timetables). While this chapter suggests one tactic that firms may use to de-risk investments amidst coups, there are likely other de-risking tactics to uncover not just for coups but other forms of political turmoil.

Third, we need to better understand the role of a MNCs' home country in influencing how they operate amidst coups. Prior studies note how political ties can be useful in times of stability but become potential liabilities amidst transition and unrest (Acemoglu et al., 2018; Leuz & Oberholzer-Gee, 2006; Siegel, 2007). We initiate the extension of these studies towards understanding how home country culture impacts MNC R&D investment. Namely, we find in this chapter that MNCs from countries that value politically oriented approaches decrease R&D investment when the political context changes and affects the usefulness of such non-market strategies. These non-market strategies become uncertain and may even become a liability rather than an asset amidst political turmoil. This initial insight only further stresses the importance of understanding not just political ties but how other business practices in one's home country affects MNC operations in a target country experiencing civil unrest.

12.13. Conclusion

Thailand is indicative of a wider set of countries that experience political turmoil and yet still demonstrate significant growth. This counters the prevailing narrative that growth can only occur in areas without such civil unrest. Given innovation is key to growth, understanding how key inputs into innovation, such as R&D activities, occur amidst political turmoil is clearly important. Only through understanding these activities with greater nuance can we better account for both the opportunities and perils of doing business in such settings. In particular, this chapter suggests a need for greater nuance around the short-term vs. long-term uncertainties that seem indicative of coups. While the Thai military coup may help resolve more day-to-day uncertainty (i.e., end protests), long-term uncertainty around the future political system remain (i.e., constitutional, and electoral timetables). This then seems to inform the tactics that MNCs employ to balance between these short-term and long-term characteristics of coups, such as investing in more variable R&D channels. We hope this chapter helps begin the process of understanding with greater nuance how to successfully navigate political turmoil, especially for businesses and policymakers alike that find themselves unable to avoid such difficult circumstances.

References

Acemoglu, D., Hassan, T. A., & Tahoun, A. 2018. The Power of the Street: Evidence from Egypt's Arab Spring. ***Review of Financial Studies***, 31(1): 1-42.

Agarwal, S., & Ramaswami, S. N. 1992. Choice of foreign market entry mode: Impact of ownership, location and internalization factors. ***Journal of International business studies***, 23(1): 1-27.

Allard, G., Martinez, C. A., & Williams, C. 2012. Political instability, pro-business market reforms, and their impacts on national systems of innovation. ***Research Policy***, 41(3): 638-651.

Atanassov, J., Julio, B., & Leng, T. 2015. The bright side of political uncertainty: The case of R&D. ***Available at SSRN 2693605***.

Campos, J. E., & Root, H. L. 2001. ***The key to the Asian miracle: Making shared growth credible***: Brookings Institution Press.

Cyert, R. M., & March, J. G. 1963. ***A behavioral theory of the firm***. Englewood Cliffs: Prentice-Hall.

Faccio, M. 2006. Politically Connected Firms. ***American Economic Review***, 96(1): 369-386.

Fisher, M. 2013. Thailand has more coups than any other country. This is why., ***Washington Post***.

Frost, S., & Ho, M. 2005. 'Going out': The growth of Chinese foreign direct investment in Southeast Asia and its implications for corporate social responsibility. ***Corporate Social Responsibility and Environmental Management***, 12(3): 157-167.

Institutes for Economics & Peace. 2021. Global Peace Index 2021: Measuring Peace in a Complex World. Sydney.

Leuz, C., & Oberholzer-Gee, F. 2006. Political relationships, global financing, and corporate transparency: Evidence from Indonesia. ***Journal of Financial Economics***, 81(2): 411-439.

Maniruzzaman, M., Rahman, M., Al-MehediHasan, M., Suri, H. S., Abedin, M., El-Baz, A., & Suri, J. S. 2018. Accurate diabetes risk stratification using machine learning: role of missing value and outliers. ***Journal of medical systems***, 42(5): 1-17.

March, J. G. 1991. Exploration and exploitation in organizational learning. ***Organization Science***, 2: 71-87.

March, J. G., & Simon, H. A. 1958. ***Organizations***. New York,: Wiley.

Maslach, D., Branzei, O., Rerup, C., & Zbaracki, M. J. 2018. Noise as Signal in Learning from Rare Events. ***Organization Science***, 29(2): 225-246.

OECD. 2021. Trends and qualities of FDI in Thailand, ***OECD Investment Policy Reviews: Thailand***: 93-115.

Pertuze, J. A., Reyes, T., Vassolo, R. S., & Olivares, N. 2019. Political uncertainty and innovation: The relative effects of national leaders' education levels and regime systems on firm-level patent applications. ***Research Policy***, 48(9).

Powell, J. M., & Thyne, C. L. 2011. Global instances of coups from 1950 to 2010: A new dataset. ***Journal of Peace Research***, 48(2): 249-259.

Rerup, C. 2009. Attentional Triangulation: Learning from Unexpected Rare Crises. ***Organization Science***, 20(5): 876-893.

Rerup, C., & Zbaracki, M. J. 2021. The Politics of Learning from Rare Events. ***Organization Science***, 32(6).

Sakhartov, A. V., & Folta, T. B. 2014. Resource Relatedness, Redeployability, and Firm Value. ***Strategic Management Journal***, 35(12): 1781-1797.

Siegel, J. 2007. Contingent Political Capital and International Alliances: Evidence from South Korea. ***Administrative Science Quarterly***, 52: 621–666.

Sirikantraporn, S. J., & Taephant, N. 2020. Cognitive-emotional regulation and aggression among Thais, ***Psychology in Southeast Asia***: 144-162: Routledge.

Stinchcombe, A. L. 2005. ***The logic of social research***. Chicago ; London: University of Chicago Press.

Stout, D. 2014. Thailand: Coups That Helped Shape the Land of Coups, ***Time***.

Zhou, X. H., Eckert, G. J., & Tierney, W. M. 2001. Multiple imputations in public health research. ***Statistics in medicine***, 20(9-10): 1541-1549.

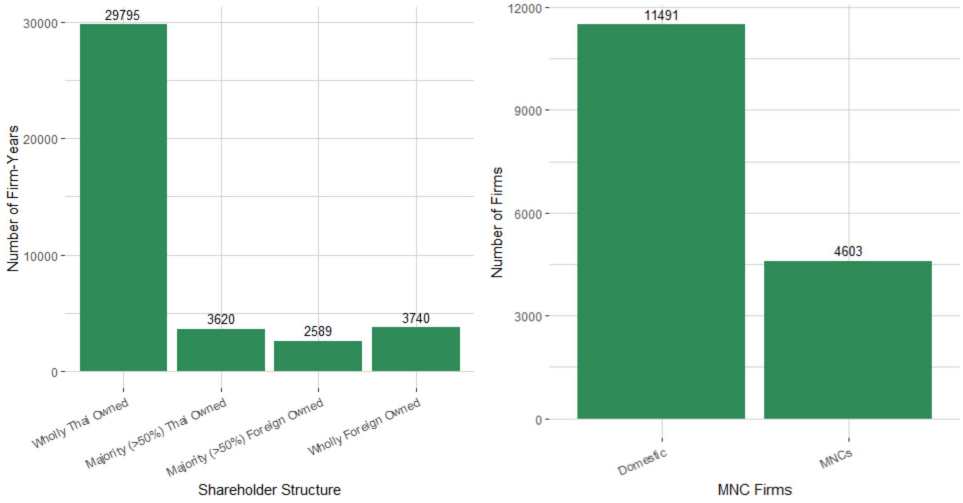
Appendix 1. R&D Innovation Survey (RDI)

The data used in this report is from a firm-level survey conducted by Thailand's Science and Technology Innovation (STI) Policy Office[51] known as the R&D and Innovation (RDI) survey. This dataset provides anonymized annual R&D spending and innovation activities of firms in Thailand from the year 2011 to 2018. The firms selected to participate in the RDI must have over 12 million

[51] This is now the National Science Technology and Innovation Policy Office of Thailand, which has been now reorganized as the Office of the National Higher Education, Science, Research and Innovation Policy Council (ONES).

Thai Baht in income (~400,000 USD). The survey uses stratified sampling, whereby firms are sampled by industry and size (as determined by fixed assets). From the raw data, there are 39,845 firm-year observations and 14,851 unique firms. This is an unbalanced panel, whereby observations are a mix of firms either repeatedly surveyed across multiple years or firms that are only surveyed one time. From Figure 12.1 (Left), we see that most firm-year observations in the RDI are for wholly Thai-owned firms (n = 29,795). There are 2,589 observations for firms that are over 50% foreign-owned, and 3,740 observations that are wholly foreign-owned. In Figure 12.2 (right), we have 4,603 firm-years for multinational firms.

Figure 12.10. Firm-year observations divided by firm ownership structure (Left) and firm numbers divided by whether the firm is a domestic firm vs. a multi-national corporation (MNC) (Right)



Source: RDI for the data and classification scheme comes from Faccio (2006)

Inevitably as with any survey, there are missing and/or miscoded responses. The concern that this presents is whether the missing data has biases. Such bias can manifest in two ways. The first bias is whether there is a marked difference between the missing and non-missing observations in the survey, which would suggest a pattern in the missing data that would impact our interpretation of the results. We ran several t-tests (by sector to match the stratified sampling procedure used) to explore the missing observations. When comparing the missing vs. non-missing firms along several observables (i.e., profits, assets, registered capital, and income), we see little meaningful difference. At least from the vantage point of the variables that we can observe, this missingness does not seem to have a discernible pattern that would bias our results.

The second is whether the missingness impacts the representativeness of the survey. By representativeness, we mean whether the composition of firms collected in the survey accurately reflects the population of firms in Thailand. To investigate this, we compared the RDI survey to the 2014 data from Thailand's Department of Business Development (DBD), the year for which we had data available for the entire population of Thai firms. When we compared data reported in the RDI to that in the DBD, there were no meaningful differences. For instance, one may worry that the RDI has much more reporting from domestic firms as opposed to foreign firms. However, from the DBD website citing 2022 data, we know that total investment from domestic Thai firms is 55.27% vs. the total investment from firms with foreign investment is 44.73%. When we total up the R&D spending from domestic- vs. foreign-invested firms in our sample, the percentages are 49.92% and 50.08%, which are of similar composition. In terms of the number of firms, DBD reports 735,077 wholly Thai-owned firms (87%) vs. 111,877 firms with some foreign investment (13%). In the RDI data, of the 14,851 firms in the data, 11,456 (77%) are wholly Thai-owned firms, and 3,348 (23%) are firms with some foreign investment. Again, the composition is not markedly different. These all suggest that the missingness in the RDI survey does not reflect significant bias. Given that, missing values were replaced with the median value in the dataset. This is a common correction technique known as median imputation, which is used in numerous prior studies with similar data missingness (Maniruzzaman et al., 2018; Zhou, Eckert, & Tierney, 2001). Further data exploration suggested also systematic differences in how missing values may have been reported between 2011-2014 (missing values = NA) and 2015-2017 (missing values = 0). To address these issues, we removed all zero values and also replaced both NA and 0 values with the median, and the results were similar. Overall, then, the methodology of the RDI, as well as our diagnostics on the data (including alternative approaches explored to account for when systematic shifts in data coding were identified) suggest this is a useful data source for developing the descriptive findings that are the basis for this chapter.

Chapter 13

PERSONAL, ORGANIZATION AND NATIONAL POLITICAL CONNECTIONS: IMPACTS ON CROSS-BORDER ACQUISITIONS BY CHINESE LISTED FIRMS

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Executive Summary

It is a common phenomenon for businesses to establish connections with the governments all over the world. Previous studies have proved that the political connections at either individual level or organizational level will influence the survival and performance of enterprises. This chapter examines how relations between two countries affect the cross-border acquisitions performance of politically connected enterprises, based on the empirical study of 172 overseas acquisitions by Chinese listed companies from 2009 to 2017. The results show that there is a significant positive correlation between personal political connections and cross-border acquisitions performance; however, the relationship between organizational political connections and cross-border acquisitions performance is not significant. The results also show that organizational political connections as well as improvement in diplomatic relations reduce firms' dependence on personal political connections.

Keywords: cross-border acquisitions performance; personal political connection; organizational political connection; national diplomatic relations; resource dependence theory

13.1. Introduction

Since the beginning of the 21st century, China's foreign investment has made remarkable achievements. According to The World Investment Report 2020 of the UNCTAD, China's annual outward investment flow was $136.91 billion in 2019, accounting for 10.4% of the global outward investment flow, ranking among the world's top three outward investors for 8 consecutive years. Cross-border mergers and acquisitions (M&As), as the major form of China's foreign investment, have attracted the attention of many scholars. How to improve cross-border M&A performance has become a compelling topic. Extensive literature has confirmed that establishing connections with governments can help enterprises achieve higher profitability (Hillman, 2005; Francis et al., 2009), and such connections are beneficial to cross-border M&A performance (Frynas et al., 2006). However, some questions still remain regarding the relationship between political connections and cross-border M&A performance.

(1) Do different levels of political connections affect cross-border M&A performance differently? Existing studies have found that the impacts of political connections on enterprises' survival and performance differ at the personal level and organizational levels. However, it remains unknown whether political connections at these two levels also differently affect cross-border M&A performance.

(2) Are there interaction effects between personal and organizational political connections on cross-border M&A performance? Seeking multi-level political linkages is a common practice in corporate political activities (Dieleman & Boddewyn, 2012; Zhu & Chung, 2014). However, existing literature does not answer whether a substitutional or complementary relationship exists between personal and organizational political connections in enterprises.

(3) How does the change in national diplomatic relations affect the cross-border M&A performance of political-connected enterprises? Compared to domestic M&A, cross-border M&A is not only influenced by domestic political relations but also more susceptible to international political relations. Against the background of the continued spread of trade protectionism and economic nationalism, changes in diplomatic relations between the two countries have exacerbated the complexity and uncertainty of international business and increased the risk of cross-border investment. However, the relationship between political connections, diplomatic relations, and cross-border M&A performance has not been explored.

Based on resource dependence theory, we propose three sets of hypotheses on the relationship between political connections and M&A performance and test them based on the overseas M&A events of Chinese listed companies from 2009 to 2017.

Different from existing research, the political connection in this paper is distinguished by the individual level and the organizational level, and we find that they have different impacts on cross-border M&A performance. (2) By taking the impact of diplomatic relations improvement on cross-board M&A performance of political-connected enterprises into account, we initially integrate the micro-individual level, the meso-organizational level, and the macro-country level political relations into the same framework. (3) We improve the measurement of corporate political connections by adopting an aggregated indicator, which is usually indicated by binary dummy variables in existing studies.

13.2. Theoretical background

Existing literature about the impact of political connections on cross-border M&A performance has not reached a consistent conclusion. Based on existing studies, the following section reveals the possible relationship between political connection and M&A performance from different theoretical perspectives.

Political connection can promote M&A performance. The political connection can be conceived as critical resources in both resource dependence theory (Lester et al., 2008; Zheng et al., 2015) and the resource-based theory (Frynas et al., 2006; Li & Zhang, 2007; Li et al., 2012), which may help enterprises improve their survival and performance. By obtaining valuable resources such as capitals, raw materials, government orders, subsidies, operation permits, valuable information and industrial policy support, political-connected enterprises can perform better than those without such connections. Besides, evidence shows that these enterprises are less likely to be punished by the governments (Zhang et al., 2016).

Political connection can damage M&A performance. According to the rent-seeking theory, governments can use administrative power to intervene and control the business activities of enterprises, which hinders market competition and allows privileged few firms to reap excessive profits. To maintain this privilege, enterprises must continuously invest in political connections. When the cost of such investment exceeds the benefits derived from the government relationship, it damages the firm performance.

Political connection can be a double-edged sword for M&A performance. Based on institutional theory, obtaining legitimacy in the host country is important for the success of firms' oversea operation (Li et al., 2019). For multinational enterprises under the dual institutional constraints of home and host countries, establishing connections with the home government increases their legitimacy recognition in the home country but reduces their legitimacy recognition in the host country. This indicates that political ties may have both positive and negative impacts on M&A performance.

When an enterprise has both personal and organizational political connections, existing studies suggest that they can complement each other and strengthen the resources-acquiring capability of enterprises, which are conducive to the enterprise's performance (Park & Luo, 2001). However, based on agency theory, the dual political relations indicate that the power of government agents as major shareholders is too strong. The power imbalance between large shareholders and small shareholders may damage small shareholders' interests, thus negatively affects enterprise performance (Young et al., 2008; Sun et al., 2015).

13.3. Hypotheses

13.3.1. Personal political connection and cross-border M&A performance

Personal political connection, which is also known as individual and managerial political connection, refers to the relationship between government and enterprises generated by the employment of senior executives with government work experience. Based on resource dependence theory, we argue that enterprises with personal political connections at least have the following advantages when conducting cross-border M&As: (1) Easier access to government subsidies and preferential policies (Cui & Jiang, 2012; Shi et al., 2014). The political connection can act as a bridge between enterprises and the government, which effectively reduces the information asymmetry, and enables enterprises to obtain government requirements information on subsidies in time. Thus, they can quickly respond to the government's requirements and then obtain government subsidies. (2) Easier and faster access to bank loans. Bank loans are one of the most important sources of financing for cross-border M&A activities. Enterprises with political connections tend to have larger financing scale and faster financing speed because political connection often signals that enterprises have good development prospects and higher social influence. (3) Easier access to home country government supports. On the one hand, compared with non-political-connected enterprises, political-connected enterprises are

more likely to obtain support from the home government when political risks (such as asset confiscation, administrative punishment, etc.) occur in the host country (Pan et al., 2014). On the other hand, political-connected enterprises can use their relationship with the home government to help themselves overcome the industrial restrictions of the host country (Frynas et al., 2006). Therefore, we propose the following assumptions:

H1: The degree of personal political connection of an enterprise is positively correlated with its cross-border M&A performance.

Chairman and CEO are the most important representatives of the board and top management team respectively. If the above hypothesis holds, their personal political connections can promote cross-border M&A performance as well. Thus, we propose the following assumptions as a supplement:

H1a (b): The degree of chairman (CEO) political connection of an enterprise is positively correlated with its cross-border M&A performance.

13.3.2. Organizational political connection and cross-border M&A performance

Organizational political connection means that the government possesses a certain proportion of enterprise ownership by purchasing enterprise shares. From the perspective of resource dependence, either organizational political connection or personal political connection can improve enterprises' ability to acquire resources. However, organizational politically connected firms differ from individual politically connected firms in two ways, which may harm their cross-border M&A performance.

(1) Multiple objectives of conducting cross-border M&As. The goal of cross-border M&As of personal political-connected enterprises is usually to pursue profit maximization. In contrast, organizational political-connected enterprises are constrained by multiple objectives, which include but are not limited to: enhancing national competitiveness, promoting the development of bilateral diplomatic relations, supporting enterprises or industries in the home country, or acquiring some strategic resources or markets (Hope et al., 2011). The pursuit of multiple acquisition goals of organizational political-connected enterprises is usually at the expense of profit.

(2) Higher visibility and lower transparency. For host countries, organizational political connections are more visible than those of personal political-connected enterprises (Li et al., 2018), so the host country government is more likely to intervene or even terminate M&A plans of organizational political-connected enterprises. Meanwhile, state-owned enterprises, which enjoy organizational pollical connections, usually have lower transparency and poorer information disclosure (Li et al., 2017). People always take a more prudent attitude towards unknown, unfamiliar, and ambiguous risks. Acquirers whose information is more transparent and accessible to the public are often more favored by the host country government.

To sum up, we argue that two levels of political connections, which are organizational and personal political connections, have heterogeneous influences on the cross-border M&A performance.

H2: The degree of organizational political connection of an enterprise is negatively correlated with its cross-border M&A performance.

13.3.3. Interaction of personal political connection and organizational political connection

When an enterprise has both personal and organizational political relations, the latter will weaken the positive effects of personal political connections on cross-border M&A performance from three aspects.

First, Organizational and personal political connections have similar effects on improving the resource-acquiring capability of enterprises, yet organizational political connections are more stable than personal political connections (Li et al., 2018) since personal political connections can be affected by the position change or departure of senior executives. Thus, the presence of organizational political connections is likely to reduce the enterprise's dependence on personal political connections. Second, as mentioned above, the M&A purpose of organizational political-connected enterprises is different from personal political-connected enterprises. Multiple M&A objectives pursued by the organizational political-connected enterprise will hinder the target achievement of personal political-connected enterprise. Besides, when an enterprise has dual political relations at the individual level and organizational levels, it means that the government agent has too much power as the major shareholder of the enterprise. This may damage small shareholders' interests and negatively affect enterprise performance (Young et al., 2008; Sun et al., 2015).

To sum up, we argue that the influences of personal political connections in overseas M&As can be substituted by the organizational political connections. Hence, the enterprise dependence on personal political relations will be reduced when it also has organizational political relations. Therefore, we propose following assumptions.

H3: Organizational political connections weaken the positive impact of personal political connections on cross-border M&A performance.

H3a (b): Organizational political connections weaken the positive impact of chairman (CEO) political connections on cross-border M&A performance.

13.3.4. Interaction of personal political connection and national diplomatic relations

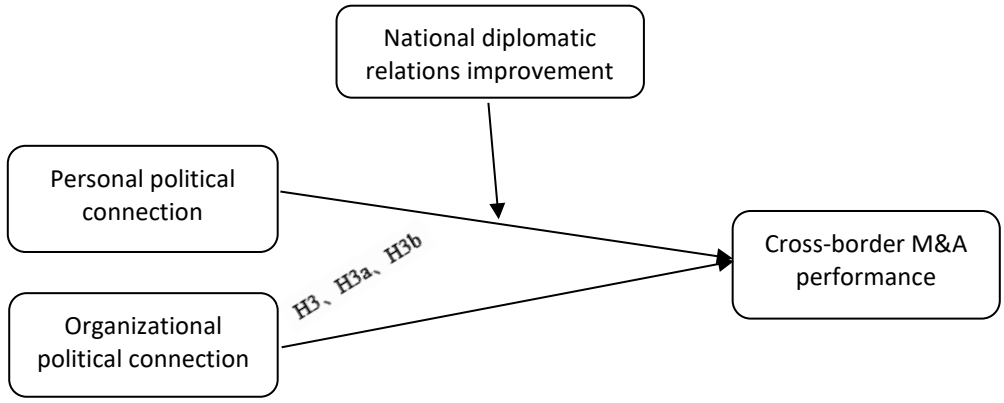
Diplomatic relations between the two countries reflect the consistency of their interests in multiple aspects, including economic, political, cultural, and security interests. Cross-border M&As is highly related to economic and security interest. The acquisition of domestic enterprises by foreign enterprises increases the dependence of the host country on other countries and increases the economic and political uncertainty for the host country. In general, the host country tends to reduce this dependence to minimize the threat of other countries and thus may intervene in M&A activities. The improvements in the country's diplomatic relations represent an increase in mutual interests and a reduction in potential conflict between the two countries. Therefore, the better the diplomatic relations between the two countries, the less likely the cross-border M&A will pose a threat to the host country government. Besides, the improvements in diplomatic relations can increase the enterprises' legitimacy in the host country market by legitimacy spillover from the national level to the firm level, which is conducive to business performance.

Therefore, the improvement of national diplomatic relations will reduce the enterprises' dependence on political relations. The assumptions are as below:

H4: Improvement of diplomatic relations between two countries weakens the positive impact of personal political connections on cross-border M&A performance.

H4a(b): Improvement of diplomatic relations between two countries weakens the positive impact of chairman (CEO) political connections on cross-border M&A performance

Figure 13.1. Research Framework



13.4. Methods

13.4.1. Samples and data

Research data are mainly from China Stock Market & Accounting Research (CSMAR) database, the Wind database, and United Nations Digital Library. The basic information, financial data, and M&As event data of enterprises are from the CSMAR database, enterprise ownership data are from the Wind database, and the voting data of bilateral diplomatic relations are from the United Nations Digital Library. This paper selects the cross-board M&As events of Chinese listed enterprises from 2009 to 2017 as the initial sample. After five filter steps, 172 overseas M&As of 142 enterprises were finally selected, including 26 state-owned enterprises and 116 non-state-owned enterprises.

13.4.2. Measurement

Table 13.1. Variables and Measurement

Category	Variables	Measurement	Sources
Dependent variable	*⊿ROA*	△ROA=ROA_{t+1}-ROA_{t-1}; ROA= net profit / total assets average balance ; total assets average balance = (Total assets closing balance + total assets opening balance) / 2	CSMAR
Independent variables	*PT (Personal Tie)*	The administrative levels of each member of the board of directors of a listed company are given different values and then summed up: 6 = national level principal, 5 = national level deputy, 4 = provincial and ministerial level principal, 3 = provincial and ministerial level deputy, 2 = Department and bureau level principal, 1 = Department and Bureau level deputy	CSMAR
	TC (Tie Chairman)	6 = national level principal, 5 = national level deputy, 4 = provincial and ministerial level principal, 3 = provincial and ministerial level deputy, 2 = Department and bureau level principal, 1 = Department and bureau level deputy, 0 = administrative level below department and bureau level, unable to determine administrative level and no government background (if there are multiple administrative levels at the same time, the highest level shall be referred to)	CSMAR
	TP (Tie President)	6 = national level principal, 5 = national level deputy, 4 = provincial and ministerial level principal, 3 = provincial and ministerial level deputy, 2 = Department and bureau level principal, 1 = Department and bureau level deputy, 0 = administrative level below department and bureau level, unable to determine administrative level and no government background (if there are multiple administrative levels at the same time, the highest level shall be referred to)	CSMAR
	OT (Organizational Tie)	Among the top ten shareholders, proportion of state-owned shares in total share capital	CSMAR
Moderator	*⊿DR(Diplomatic Relation)*	Dr = 1-2D / D_{max}, where D is the difference between the voting results of a certain country and that of China in a given year, and D_{max} is the largest possible difference between the voting results of a certain country and that of China in a given year. Record "YES vote" as 1, "No vote" as 0, "Abstentions" and "Non-Voting" are not counted. The coefficient ranges from -1 to +1, representing the poor to excellent diplomatic relations between two countries. △DR is the difference between the diplomatic relations DRT in the year of merger and acquisition and the diplomatic relations DRt-1 in the year before the merger and acquisition, which is used to measure the changes in diplomatic relations.	United Nations Digital Library
Control variables	*LEV*	LEV= Total liabilities / total assets	CSMAR
	AGE	Listing age	CSMAR
	OC (Ownership Concentration)	The total shareholding ratio of the top 10 major shareholders of the company	CSMAR
	PAY	Cash payment = 1, non-cash payment = 0	CSMAR
	SIZE	log of total assets in the year before the first announcement date	CSMAR
	PID (Proportion of Independent Directors)	PID= Number of independent directors / total number of directors	CSMAR
	Year	Set 8 dummy variables	CSMAR

Source: United Nations Digital Library ： https://digitallibrary.un.org/?ln=zh_C

13.5. Findings and discussions

13.5.1. Empirical findings

The empirical results are reported in Table 13.2.

Table 13.2. Main empirical findings

Hypothesis	Content	prediction	Result
H1	Personal political tie — Cross-board M&A performance	Positive	Supported
H1a	Chairman — Cross-board M&A performance	Positive	Supported
H1b	CEO — Cross-board M&A performance	Positive	Unsupported and opposite to hypothesis (Negative relation)
H2	Organizational political tie — Cross-board M&A performance	Negative	Unsupported
H3	Personal political tie — Organizational political tie — Cross-board M&A performance	Weakens the positive relation	Supported
H3a	Chairman — Organizational political tie — Cross-board M&A performance	Weakens the positive relation	Unsupported
H3b	CEO — Organizational political tie —Cross-board M&A performance	Weakens the positive relation	Unsupported
H4	Personal political tie — diplomatic relation — Cross-board M&A performance	Weakens the positive relation	Supported
H4a	Chairman — diplomatic relation — Cross-board M&A performance	Weakens the positive relation	Supported
H4b	COE — diplomatic relation — Cross-board M&A performance	Weakens the positive relation	Unsupported

Source: Authors of this chapter, based on their empirical study by taking publicly listed Chinese enterprises in Shanghai and Shenzhen Stock Exchanges from 2009 to 2017 as the sample.

The empirical results show that a significant positive correlation exists between personal political connection and cross-border M&A performance, while the relationship between organizational political connection and cross-border M&A performance is not significant. Hypothesis H1 is supported and there is no evidence to support H2. In addition, we found an interesting result, the chairman's political connection is positively related to cross-border M&A performance, but CEO's political connection is negatively related to cross-border M&A performance. One possible explanation might be that the CEO, as the agent of the firm, will have too much power over the enterprise when she or he has a personal political connection. These CEOs can bring critical resources to the enterprises and are also able to conduct self-interested behaviors that damage M&A performance. For example, CEOs may initiate cross-border M&As that are not conducive to the enterprise but are beneficial to their reputation and future career development.

Although the relationship between organizational political connection and cross-border M&A performance is not significant, organizational political connection significantly weakens the positive correlation between personal political connection and cross-border M&A performance. Similarly, the improvement of diplomatic relations does not directly affect cross-border M&A performance but significantly weakens the positive correlation between personal political connection and cross-border M&A performance. That is to say, both organizational- and national-level political connections reduce the dependence of enterprises on personal political connections.

13.5.2. Managerial implications

Based on our findings, we provide three recommendations for enterprises: (1) Choosing a cross-border M&A strategy for overseas expansion should be a prudent decision, as cross-border M&A activities often fail to create sufficient value for enterprises. (2) Chinese enterprises, even with strong market power, should not overlook the influence of government on the business activities and building the political relationship. Previous studies have shown that active corporate political behavior can improve overall business performance. We suggest that only by effectively integrating market and political behavior can enterprises improve their cross-border M&A performance. (3) Acquirers should choose the M&A target from the host countries with improving diplomatic relations with the home country to reduce the liability of foreignness in the host countries and the dependence on the home government.

For the government, it is necessary to improve the information transparency of industrial subsidies and support policies, and ensure the fairness of the policy audit procedure, so that enterprises without political connections can also obtain policy support fairly.

References

Cui, L., Jiang, F. State ownership effect on firms' FDI ownership decisions under institutional pressure: A study of Chinese outward-investing firms[J]. Journal of International Business Studies, 2012, 43(3).
Dieleman, M., Boddewyn, J. J. Using organization structure to buffer political ties in emerging markets: A case study[J]. Organization Studies, 2012, 33(1).
Francis, B. B., Hasan, I., Sun, X. Political connections and the process of going public: Evidence from China[J]. Journal of International Money and Finance, 2009, 28(4).
Frynas, J. G., Mellahi, K., Pigman, G. A. First mover advantages in international business and firm-specific political resources[J]. Strategic Management Journal, 2006, 27(4).
Gartzke, E. Kant we all just get along? Opportunity, willingness, and the origins of the democratic peace[J]. American Journal of Political Science, 1998.
Hillman, A. J. Politicians on the board of directors: Do connections affect the bottom line?[J]. Journal of Management, 2005, 31(3).
Hope, O., Thomas, W., Vyas, D. The cost of pride: Why do firms from developing countries bid higher?[J]. Journal of International Business Studies, 2011, 42(1).
Lester, R. H., Hillman, A., Zardkoohi, A. et al. Former government officials as outside directors: The role of human and social capital[J]. Academy of Management Journal, 2008, 51(5).
Li, H., Zhang, Y. The role of managers' political networking and functional experience in new venture performance: Evidence from China's transition economy[J]. Strategic Management Journal, 2007, 28(8).
Li, J., Li, P., Wang, B. The liability of opaqueness: State ownership and the likelihood of deal completion in international acquisitions by Chinese firms[J]. Strategic Management Journal, 2019, 40(2).
Li, J., Meyer, K. E., Zhang, H. et al. Diplomatic and corporate networks: Bridges to foreign locations[J]. Journal of International Business Studies, 2018, 49(6).
Li, J., Xia, J., Lin, Z. Cross-border acquisitions by state-owned firms: How do legitimacy concerns affect the completion and duration of their acquisitions?[J]. Strategic Management Journal, 2017, 38(9).
Li, W., He, A., Lan, H. et al. Political connections and corporate diversification in emerging economies: Evidence from China[J]. Asia Pacific Journal of Management, 2012, 29(3).
Pan, Y., Teng, L., Supapol, A. B. et al. Firms' FDI ownership: The influence of government ownership and legislative connections[J]. Journal of International Business Studies, 2014, 45(8).
Park, S. H., Luo, Y. Guanxi and organizational dynamics: Organizational networking in Chinese firms[J]. Strategic Management Journal, 2001, 22(5).
Shi, W., Markóczy, L., Stan, C. V. The continuing importance of political ties in China[J]. Academy of Management Perspectives, 2014, 28(1).
Sun, P., Mellahi, K., Wright, M. et al. Political tie heterogeneity and the impact of adverse shocks on firm value[J]. Journal of Management Studies, 2015, 52(8).
Young, M. N., Peng, M. W., Ahlstrom, D. et al. Corporate governance in emerging economies: A review of the principal-principal perspective[J]. Journal of Management Studies, 2008, 45(1).
Zhang, J., Marquis, C., Qiao, K. Do political connections buffer firms from or bind firms to the government? A study of corporate charitable donations of Chinese firms[J]. Organization Science, 2016, 27(5).
Zheng, W., Singh, K., Mitchell, W. Buffering and enabling: The impact of interlocking political ties on firm survival and sales growth[J]. Strategic Management Journal, 2015, 36(11).
Zhu, H., Chung, C. Portfolios of political ties and business group strategy in emerging economies: Evidence from Taiwan[J]. Administrative Science Quarterly, 2014, 59(4).

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