From Hermit Kingdom to Open for Business

Developing a Blueprint for North Korea's Economic Development

KRISHNA B. KUMAR, TROY D. SMITH, DIANA Y. MYERS, TIMOTHY R. GULDEN, NOAH JOHNSON
Preface

North Korea is one of the poorest countries in the world, with half its population living in extreme poverty. Much existing literature on North Korea focuses on the security situation in the Korean Peninsula and the paths to peace. We instead focus on blue-sky thinking that is not aimed at recommending political and security processes by which North Korea can get to a state of economic integration, but to contribute to developing a blueprint for economic reforms once the situation in North Korea becomes amenable to it. Toward this end, we develop a roadmap of reforms to enable investment flow into North Korea to create economic growth and development. Having such a blueprint will help the country if and when it gets integrated into the global community. And we entertain the likelihood that a focus on what is possible might even aid attempts at such integration in the first place. This report is likely to be of interest to scholars and policymakers alike who study and deal with North Korea.

This study was undertaken by two divisions of the RAND Corporation: RAND Education and Labor and RAND Social and Economic Well-Being. RAND Education and Labor conducts research on early childhood through postsecondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking. Questions about RAND Education and Labor should be directed to educationandlabor@rand.org. RAND Social and Economic Well-Being is a division of the RAND Corporation that seeks to actively improve the health and social and economic well-being of populations and communities throughout the world. For more information, email sbp@rand.org.

More information about RAND can be found at www.rand.org. Questions about this report should be directed to Krishna B. Kumar at kumar@rand.org.

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Contents

Preface ............................................................................................................................................ iii
Figures ............................................................................................................................................. v
Tables ............................................................................................................................................. vi
Summary ....................................................................................................................................... vii
Acknowledgments .......................................................................................................................... xi
Abbreviations ................................................................................................................................ xii
1. Introduction ................................................................................................................................. 1
2. An Assessment of North Korea’s Economic Landscape ............................................................ 7
   A Brief Timeline of Economic Trends ....................................................................................... 7
   Socioeconomic Indicators of North Korea ............................................................................... 11
3. Eye in the Sky: Tracking SEZ Activity Using Satellite Data ................................................... 19
   Methodology ............................................................................................................................. 20
   Findings .................................................................................................................................... 23
4. Priority Sectors to Target .......................................................................................................... 30
   Insights from Trade Data .......................................................................................................... 30
   Priority Sectors ......................................................................................................................... 35
5. Lessons for North Korea’s Development from Other Countries ........................................... 39
   Similarities and Differences to Other Countries ....................................................................... 40
   Reforms in Other Countries ...................................................................................................... 44
6. Frameworks to Attract Foreign Investment .............................................................................. 63
   Increased Investment from Neighbors ...................................................................................... 64
   Preconditions for Involvement of Multilateral Organizations .................................................. 66
   Applying Existing Investment Frameworks to North Korea .................................................... 68
7. Reform Roadmap: A Synthesis ................................................................................................. 75
   Prioritized Steps in the Roadmap .............................................................................................. 76
   A Priority Ease of Implementation Matrix ............................................................................... 80
   Roadmap Steps by Type of Activity ......................................................................................... 81
8. A North Korea Open for Business: Benefits for All ................................................................. 82
Appendix. Constructing Similarity Indexes .................................................................................. 83
References ..................................................................................................................................... 86
Figures

Figure 2.1. Proliferation of Jangmadang in North Korea ............................................................. 10
Figure 2.2. GDP Growth Rate....................................................................................................... 14
Figure 2.3. Energy Sources ........................................................................................................... 15
Figure 2.4. Capacity Factors by Generation Type ........................................................................ 16
Figure 2.5. Location of the Kaesong Industrial Complex............................................................. 17
Figure 3.1. Nighttime Light in October 2019 for North Korea and South Korea ......................... 20
Figure 3.2. Light-Based Estimate of Economic Activity (Left) Compared with
Population (Right)......................................................................................................................... 22
Figure 3.3. Four Snapshots of Light-Based Economic Activity for North Korean SEZs ........... 24
Figure 3.4. Light-Based Economic Activity of North Korean SEZs (1992–2019) ....................... 25
Figure 4.1. North Korean Trade Flows by Trading Partner, 2010–2019 ...................................... 31
Figure 4.2. Top Ten North Korean Exports by Average Volume, 2010–2019 ............................ 32
Figure 4.3. Top Ten North Korean Imports by Average Annual Volume, 2010–2019 ................ 33
Figure 4.4. North Korean Exports over Time, 2010–2019, by Sector .......................................... 34
Figure 4.5. North Korean Imports over Time, 2010–2019, by Sector .......................................... 34
Figure 5.1. Cultural Similarity to North Korea Among Comparison Countries ......................... 42
Figure 5.2. Demographic Similarity to North Korea Among Comparison Countries ............... 43
Figure 5.3. Economic Similarity of North Korea Among Comparison Countries ................. 44
Figure 6.1. A Layered Approach to Investment Reform .............................................................. 63
Tables

Table S.1. Roadmap Steps by Priority and Ease of Implementation .............................................. x
Table 2.1. GDP Estimates (Nominal) ........................................................................................... 12
Table 2.2. Per Capita GDP (PPP Adjusted) ................................................................................ 12
Table 2.3. Key Demographic Indicators .................................................................................... 13
Table 2.4. Composition of GDP ............................................................................................... 14
Table 3.1. Key Characteristics of North Korean SEZs ................................................................. 28
Table 7.1. Roadmap Steps by Priority and Ease of Implementation ............................................ 81
Table 7.2. Roadmap Steps by Type of Activity .......................................................................... 81
Table A.1. Characteristics Determining Cultural Similarity ...................................................... 83
Table A.2. Characteristics Determining Demographic Similarity ............................................. 84
Table A.3. Characteristics Determining Economic Similarity .................................................. 85
Summary

We have developed a blueprint for economic development in North Korea using foreign investment as an organizational framework. Our blue-sky thinking is not aimed at recommending political and security processes by which North Korea can become reform ready or get to a state of global integration, but at developing a roadmap for economic reforms once the situation in North Korea becomes amenable to it. Therefore, we do not take a stance one way or the other, and do not make recommendations, on issues such as sanctions, denuclearization, or peace processes, even when their occasional mention becomes inevitable during the course of setting the relevant context. We also do not make recommendations for any country other than North Korea. There is much existing literature on these topics, but comprehensive studies on how North Korea can institute economic reforms are rare. This is the gap we seek to fill.

We first assessed the current socioeconomic situation in North Korea using existing published descriptions and data. North Korea is one of the poorest countries, lagging its southern neighbor considerably in most socioeconomic indicators. Hunger is endemic; a third of the country’s children are stunted; and multidrug resistant tuberculosis is a serious health concern. North Korea initially modeled its economic system after the former Soviet Union, with state-owned enterprises focusing on heavy industry, mining, and manufacturing. The collapse of the Soviet Union—on which North Korea relied for aid, subsidies, and imports—and a famine in the mid-1990s that brought about the failure of the public distribution system (PDS) on which the people relied on for food rations, created a grassroots movement toward an informal market-oriented economic system. The donju class of traders and businessmen emerged and jangmadang—informal markets—started proliferating. Income derived from unofficial jobs, as opposed to official government jobs, grew to nearly two-thirds of total personal income of individuals.

Most industrial activity in North Korea occurs in special economic zones (SEZs). Although the Kaesong Industrial Complex (KIC), established in 2002 as a result of South Korea’s “Sunshine Policy,” is the best known, there are others. We conducted original analysis using publicly available satellite data on nighttime lights to track economic activity in the country’s SEZs, overcoming the technical difficulty of low levels of lighting and therefore economic activity. We constructed 27 years of economic trajectories for eight SEZs using nighttime light data; economic activity in them has been highly volatile and the rise and fall of activity generally align with known or rumored economic events.

Using these economic assessments, we identified a few sectors that need to be prioritized for development. Food insecurity and inefficiency point to the need to target the agricultural sector. A reliable supply of electricity ranks high on investor needs. The poor state of electricity generation and transmission necessitates a focus on the electricity sector. Transportation and
logistics, a prerequisite for other industries, emerges as another priority sector, especially given the disrepair of the country’s existing and extensive rail network. Using trade data, we identified sectors from which North Korea’s exports primarily originated—mining and light manufacturing—and in which the country might therefore have a “comparative advantage,” making them priority targets for development.

We next drew lessons for North Korea from the development trajectories of a few countries that at the start of their economic reform were similarly situated to North Korea today. We examined Vietnam, China, and South Korea, which have been often suggested as models for North Korea, and with whom it shares a few cultural similarities. Each of these countries had a different political system: South Korea in the 1960s was a developmental dictatorship; China in the 1970s was communist; and Vietnam in the 1980s was a socialist-oriented market economy. This shows that economic reform and development are consistent with different political systems. However, when it came to the reforms themselves, they shared similarities: removing trade barriers, attracting foreign investment, focusing on education and infrastructure, and improving the ease of doing business through regulatory reforms and encouraging entrepreneurship. Similar reforms were also instituted by Poland in the 1990s (which has a few demographic similarities with today’s North Korea) and India in the 1990s (which was economically similar to North Korea). The Russian reforms of the 1990s, when unchecked corruption and lack of transparency led to the capture of privatization by the so-called oligarchs, is a cautionary tale for North Korea.

We developed a layered framework aimed at attracting investment first from South Korea and other past investors, then from multilateral organizations, next from emerging economies which may be willing to take risks, and finally from the developed countries which are likely to be the most demanding in terms of an investment framework. Improving operations within existing SEZs, and developing bilateral ties and dispute resolution procedures could be aimed to resuscitate investment from past investors. Reporting credible economic statistics would make North Korea eligible to join the International Monetary Fund (IMF), which in turn is a prerequisite to joining the World Bank; technical and development assistance could be obtained from these institutions. We then applied currently existing investment frameworks from the World Bank and the United Nations Conference on Trade and Development (UNCTAD) to North Korea. Developing international investment agreements (IIAs) (even as an overall judicial framework is being developed), focusing on short-term gains and building confidence and sending the appropriate signals to the global investment community, and improving SEZs though fiscal incentives, infrastructure, and streamlined business procedures emerge as strategies North Korea could pursue.

Informed by an understanding of the North Korean economic situation, the experiences of comparison countries, and by tailoring investment frameworks to North Korea, we developed a sequenced roadmap of reforms to enable investment flow into North Korea to foster economic growth and development.
Short Term (Within Five Years): Basic Steps to Initiate Economic Development

- Improve operation of existing SEZs such as KIC.
- Join the IMF.
- Address infrastructure needs, especially on electricity.
- Remove barriers to investment entry.
- Undertake small projects to demonstrate intent and commitment.
- Formalize and expand the Jangmadang.

Medium Term (in Six to Ten Years): Enhanced Steps for Broad-Based Development

- Develop IIA and dispute settlement frameworks.
- Undertake basic judicial reforms aimed at investor protection.
- Set up SEZs to attract investment from emerging economies.
- Build skills for value chain development.
- Improve access to finance, technology, and markets.
- Address inequality.

Long Term (Beyond Ten Years): Advanced Steps to Sustain Reforms and Grow

- Apply to join the World Trade Organization (WTO).
- Undertake broader macroeconomic reforms.
- Institute broader judicial reforms to improve governance and attract foreign direct investment (FDI).
- Simplify business procedures.
- Set up SEZs to attract investment from multinational corporations (MNCs) in developed countries.
- Privatization of state-owned enterprises.

We also present the reforms in a priority and ease of implementation matrix (see Table S.1), which policymakers can follow a route to reform based on local contingencies and constraints different from the sequence of reforms we have recommended.

It is hoped that when the North Korean regime sees that opening up to foreign investment and carrying out economic reforms will benefit both itself and its people, it will eventually be inclined to do so. The humanitarian appeal to the rest of the world in improving the lives of some of the poorest people in the world is obvious. But a North Korea that is on a solid economic footing and benefits from foreign investment might also make for a more peaceful neighbor and a cooperative global citizen. International trade and foreign investment are based on a notion of a positive-sum game, and investors in other countries will reap a high return from this nascent market, provided North Korea establishes a stable environment and undertakes the reforms we have discussed to make such investment attractive.
# Table S.1. Roadmap Steps by Priority and Ease of Implementation

<table>
<thead>
<tr>
<th>Ease of Implementation</th>
<th>High-Priority Steps</th>
<th>Subsequent Steps</th>
</tr>
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| Easier to implement    | Improve operation of existing SEZs, such as KIC  
Undertake small projects to demonstrate intent and commitment  
Formalize and expand the Jangmadang | Develop IIA and dispute settlement framework  
Set up SEZs with emerging economies  
Build skills for value chain development  
Undertake basic judicial reforms aimed at investor protection  
Improve access to finance, technology, and markets |
| Harder to implement    | Join the IMF  
Join the World Bank and the Asian Development Bank  
Address infrastructure needs, especially in electricity  
Remove barriers to investment entry | Address inequality  
Apply to join the WTO  
Undertake broader macroeconomic reforms  
Institute broader judicial reforms to improve governance and attract FDI  
Simplify business procedures  
Set up SEZs to attract investment from MNCs in developed countries  
Privatization of state-owned enterprises |
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### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ASEAN</td>
<td>Association of South East Asian Nations</td>
</tr>
<tr>
<td>BkWh</td>
<td>billion kilowatt hours</td>
</tr>
<tr>
<td>BoK</td>
<td>Bank of Korea</td>
</tr>
<tr>
<td>DMSP OLS</td>
<td>Defense Meteorological Satellite Operational Line Scan</td>
</tr>
<tr>
<td>DPRK</td>
<td>Democratic People’s Republic of Korea</td>
</tr>
<tr>
<td>EMDE</td>
<td>emerging markets and developing economy</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FCS</td>
<td>fragile and conflict states</td>
</tr>
<tr>
<td>FDI</td>
<td>foreign direct investment</td>
</tr>
<tr>
<td>GDP</td>
<td>gross domestic product</td>
</tr>
<tr>
<td>HS</td>
<td>harmonized system</td>
</tr>
<tr>
<td>IFI</td>
<td>international financial institution</td>
</tr>
<tr>
<td>IIA</td>
<td>international investment agreement</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>KIC</td>
<td>Kaesong Industrial Complex</td>
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<tr>
<td>KOSIS</td>
<td>Korean Statistical Information Services</td>
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<tr>
<td>kWh</td>
<td>kilowatt hours</td>
</tr>
<tr>
<td>MNC</td>
<td>multinational corporation</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PDS</td>
<td>public distribution system</td>
</tr>
<tr>
<td>PPP</td>
<td>purchasing power parity</td>
</tr>
<tr>
<td>SEZ</td>
<td>special economic zone</td>
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<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>VIIRS</td>
<td>visible infrared imaging radiometer suite</td>
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<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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1. Introduction

With a gross domestic product (GDP) per person estimated at $1,700 per year, adjusted for purchasing power parity (PPP), North Korea—sometimes dubbed the “Hermit Kingdom”—is one of the poorest countries in the world.¹ Half the population lives in extreme poverty. Hunger is endemic, with a third of children stunted due to malnutrition (Dobson, 2020). There are high levels of unmet health care needs, and disparities in access and care provision are large (Lee et al., 2020). Multidrug-resistant tuberculosis is a serious public health problem in the country (Seung, Franke, and Linton, 2016). Given these facts, it is an understatement to say North Korea is in serious need of socioeconomic development. However, the country is saddled with chronic and staggering structural problems that have impeded the start of the development process (The Heritage Foundation, 2020). It is centrally commanded by a repressive regime, a closed economy for all practical purposes, and in conflict with much of the world.

It is very difficult to guess when the situation in North Korea will become conducive to foreign investment and development. But when it does, what are the country’s greatest economic needs? Which economic sectors offer the best chance for North Korea to kickstart its development? What lessons from history can the country learn? In particular, which are the development paths from other countries most likely relevant for North Korea to follow? What are the conditions under which foreign capital is likely to flow into this impoverished land? Given the large-scale need for reforms, which ones should be prioritized? These are the questions we tackle in this study.

Our blue-sky thinking is, in part, inspired by a previous study by the RAND Corporation that examined how an independent Palestinian state could be made successful (the RAND Palestinian State Study Team, 2007). The motivation of the study stated in the preface—“RAND did not examine how an agreement creating such a state could be reached. Rather, we developed analytically based recommendations about the steps necessary to promote success”—almost exactly captures the spirit of our study as well. Our aim is not to recommend political and security processes by which North Korea can get to a state of economic integration with the rest of the world so that it could embark on its path of economic development. Rather, our aim is to contribute to developing a blueprint for economic reforms once the situation in North Korea becomes conducive to it. Any discussion of the current geopolitical situation of the country is intended to be purely factual, to illuminate the connections with development paths of other countries and highlight the need for specific investment and other economic reforms. Therefore,

¹ Purchasing power parity, abbreviated as PPP, is, “The rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country” (Callen, 2020).
we do not take a stance—implicit or explicit—one way or the other, on issues such as sanctions, denuclearization, or peace processes even when their occasional mention becomes inevitable during the course of setting the relevant context. There is a rich literature examining these topics and our focus is purely on the economic issues (Dossani, 2020; Heintz, Shurkin, and Mallory, 2019; Min and Han, 2020). We also do not make recommendations for any country other than North Korea.

It is natural to wonder if a study that abstracts completely from the geopolitical challenges surrounding North Korea can be relevant. A quick summary of recent developments in the country, into which we will delve in detail later, gives us hope that envisioning an economic future for North Korea and planning for it is not a futile exercise. The country has gone through significant amounts of change since the 1990s—it overcame the great famine and had two successful regime successions—and has demonstrated economic resiliency despite doubts held by numerous experts about the survival of the regime. The rise of North Korea’s private sector, the emergence of the donju class of traders and businessmen, the entrepreneurial growth in informal markets (Jangmadang) even in response to a merely tolerant stance by the regime, and the continuing presence of North Korean workers all over the world, are indications of stability and resilience, and an acceptance of the need for economic reform.

Beginning in 2013, Chairman Kim Jong Un, the leader of North Korea, promoted his byungjin policy, which put economic growth on par with national security as a top policy objective (Sang-Hun, 2020). In his 2018 New Year speech, he expressed “fresh hopes and expectations” for better relations between North Korea and the United States, improvement in the “frozen” relationship with South Korea, and economic reforms that would improve standards of living. He again echoed these sentiments in his 2019 New Year address, stating that “improving the people’s standard of living radically is a matter of greatest importance.” President Moon Jae-in of South Korea also believed that the North was ready for reform, stating in September 2018, “North Korea is very much willing to go through procedures such as accession to the IMF or the World Bank” (Corrado, 2020).

Although relations with the United States and South Korea had cooled substantially by the time of his New Year speech in 2020, Kim again mentioned the need to “rearrange the economic foundation of the country.” However, the statement was ambiguous and typical of Kim’s frustrating vacillation, with some experts believing that this actually signaled a further retrenchment to state control over the means of production rather than a signal of relaxing controls and a move toward market-oriented principles. Kim made clear that there would be no Chinese-style reform in the immediate future, saying “We can never sell our dignity . . . in hope for brilliant transformation” (Corrado, 2020). Despite the conflicting signals, North Korea does not appear poised to roll back the rise in informal markets. It would therefore be useful to have a blueprint for economic development whenever the North Korean regime is ready for more formal reforms and international conditions permit it. Although we might not always explicitly

2
refer to a situation in which North Korea is “reform ready,” this is implied in all our discussions of economic reform.

Toward this end, we assess North Korea’s economy using existing published sources in the public domain. Reliable data on North Korea are difficult to obtain. Therefore, in addition to reviewing existing documents and data to shed qualitative and quantitative light on the North Korean economy, we also examine publicly available satellite data to gauge economic development on a geographic basis. We focus on economic activity in special economic zones (SEZs), which will be the cornerstone of the investment strategy we recommend. We study publicly available trade data to identify a few sectors in which North Korea might have a comparative advantage and should therefore prioritize on its path to development. In addition to these aspirational sectors, the country will also have to focus on improving a few prerequisite sectors such as infrastructure, most notably, electricity, on which our analysis of satellite data also sheds some light.

We also consider historic development experiences of a few countries to draw lessons for North Korea’s development. We choose the countries with cultural, demographic, and economic similarities in mind; at the same time, we also seek a diversity of experiences from which North Korea can benefit. Understanding reforms that worked well in comparison countries would allow us to better apply existing investment frameworks to North Korea, setting the stage for an examination of reforms needed for investment to flow into the country. We view these reforms in an “onion” framework, starting with institutions and investing countries that are likely to be least demanding of an investment framework to those that are increasingly more demanding. For instance, attracting investment from countries that already have connections and relationships with North Korea, and especially into SEZs that already exist, would be the easiest and most realistic option. Developing ties with multilateral institutions to access development finance and technical know-how would come next. Therefore, our short-term recommendations are for steps that facilitate these capital flows. Deeper reforms to attract investment from multinational corporations (MNCs) in developing and developed countries follow. Viewing reforms in this layered fashion will allow us to prioritize and organize them in the form of an actionable roadmap. Because North Korea will essentially be starting from scratch in developing a reform framework, it can easily get overwhelmed without such a blueprint.

We view the ability to attract foreign investment as the cornerstone for North Korean economic development. There are several reasons for this. Foreign investment contributes significantly to economic development. The World Bank (2018) summarizes evidence on the benefits of foreign investment: It attracts capital; transfers technology, knowledge, and organizational skills through linkages between foreign forms and local partners; provides access to foreign markets; enhances productivity; and creates jobs. More recently, foreign investors have started playing a positive role in broader aspects of development such as providing public goods and infrastructure, tackling climate change, and improving labor conditions. Furthermore, North Korea is a very poor country and it is hard to see how it can develop without access to
foreign investment. The collapse of the Soviet Union has left it starved for capital and caused a degradation of existing infrastructure. We consider layering foreign investment from the least demanding to the most demanding investors, as discussed above, and each step demands reforms from North Korea in accordance with international best practices. Besides allowing for staged reforms in a tractable way, this approach will gradually improve institutions and policies to foster broader economic development. For instance, international investment agreements (IIAs) are intended to be complementary to the development of a national legal framework. Even though foreign investment is one engine of development (albeit an important one), given these reasons it is a valuable organizing principle for structuring economic reforms in the North Korean context.

We rely on a review of the literature, analysis of secondary data (including satellite data), country case studies, and a study of investment frameworks developed by multilateral organizations to conduct our analyses. Although we view these sources using the lens of our collective experience and expertise in economics, country knowledge, and analytic methods, the sources and data themselves are publicly available and citable. In particular, we refrained from conducting expert interviews given the wide range of strong opinions North Korea invokes (though if such opinions were published, we refer to them, as needed and relevant). If a source cannot be cited, we do not use it.

There are several studies and commentaries that provide assessments of the North Korean economy, especially on its tentative tolerance of a market economy. For instance, Lankov (2016) discussed how since 1990, the private sector has become one of North Korea’s largest economic backbones, and how this emergence has given rise to a new social class—the donju (masters of money). Hanssen and Song (2019) discussed the potential for marketization operations in North Korea, and based on an evaluation of four potential scenarios, concluded that moderate change is the most likely scenario given it is the most feasible one under the current conditions. In addition, they noted successful marketization and prosperity will heighten Kim’s legitimacy (Hanssen and Song, 2019). Ruediger (2018) also noted the possibility that Kim could use his prominent focus on the economy and the transition to an open market economy as leverage, while noting the possible unsettling effect arising from emergence of younger generations of entrepreneurs (Ruediger, 2018). Lee et al. (2020) reviewed the North Korean economy as of 2019 and pointed out that the predictions made in 2018 about North Korea’s economy did not reflect reality: Because of sanctions, significant sectors of North Korea’s economy suffered, whereas sectors like energy, which was predicted to face the greatest strain, remained relatively stable in 2019. Silberstein (2020) also reviewed North Korea’s economy in 2019 and noted that exchange rates were relatively stable in the last year and smuggling operations were consistently generating revenue for the government. A report by the Organisation for Economic Co-operation and Development summarizes the state of the North Korean economy, salient trends, the effect of sanctions on the economy, structural changes such as the emergence of small markets and SEZs, and emerging economic planning strategies—namely a push for technological modernization and science education (Koen and Beom, 2020).
There are discussions in the literature on which country North Korea should use as a model for development. We defer a review of this literature to Chapter 4, where we consider these countries in detail. On the investment front, Hastings (2016) discussed how foreign investors, particularly those from China, were able to navigate through North Korea’s difficult investment environment. Bribery is a central tenet of the country’s economy and this has made foreign investment difficult (Hastings, 2016). Green and Yongseok (2019) discussed how the Kaesong Industrial Complex (KIC)—one of the policies enacted during South Korea’s pro-North Korean era under their “sunshine policy” and one example of an SEZ—could be leveraged to help Korean relations.

Relative to the literature, our analysis of the North Korean economy using satellite data is of interest in its own right, given the paucity of reliable data. Likewise, the use of trade and satellite data to take a sectoral focus to the country’s development is also novel. However, we go beyond assessing the current North Korean economy to developing a blueprint for reform to attract investment and aid development. Although many studies have focused on whether a specific country—say, Vietnam or China—is a suitable model of North Korea to follow, we study the experiences of a diverse set of countries, so that a combination of strategies can be followed. Although the country case studies and existing investment frameworks do not unearth surprises—for instance, improved governance, removing barriers to investment entry and then protecting investors, and addressing infrastructure constraints have been recommended in multiple contexts—we tailor these recommendations for North Korea based on our assessment of the economy.

There are limitations to our study. As mentioned earlier, there are large socioeconomic disparities within North Korea, and there is a need for any economic growth in the country to be inclusive of all groups. There is a danger that the donju class might capture most of the benefits of foreign investment and growth, without a broader level of development and improvement in people’s lives. Where appropriate, we do voice caution about reforms and policies that could exacerbate inequality. However, in the absence of detailed distributional data and given the grueling constraint of an authoritarian regime, we do not focus on issues of equitable development. However, economic growth is considered a powerful engine of poverty reduction, and it is hoped that reforms aimed at aggregate growth would at the least result in the reduction of abject poverty, even if the gains are not distributed evenly (Department of International Development, 2008). On a related note, we use foreign investment as an organizing framework for economic development, which could aid local businesses as well, but such businesses may also need other reforms aimed specifically at them. We also share the limitation of much of the literature regarding information on the economic conditions within North Korea: Data on the country are not always reliable. We use multiple sources and methods to circumvent this challenge to the extent possible. And as argued above, although we think a blueprint of the sort we develop will be relevant, we have intentionally chosen to be silent on the types of political and security changes necessary to create conditions in North Korea conducive to international investment.
The rest of this paper proceeds as follows. In Chapter 2, we provide an assessment of the North Korean economy based on existing literature and secondary data sources. We conduct original analysis using publicly available satellite data in Chapter 3, to track economic activity in SEZs, which will likely play an important role in future industrial policies. Chapter 4 identifies a few priority sectors to target for development. Chapter 5 discusses the development trajectories of six other countries, drawing lessons for North Korea from each. In Chapter 6, we examine the elements of a framework for foreign investment to flow into North Korea. Using the practical lessons learned from other countries in Chapter 5, and an understanding of the North Korean economic situation gained from previous sections, we tailor the framework developed in Chapter 6 to the country to synthesize recommendations and provide a roadmap for reform in Chapter 7. Chapter 8 concludes by briefly discussing the implications of North Korean economic development for the rest of the world and identifying topics for future research.
2. An Assessment of North Korea’s Economic Landscape

Reliable information and data about North Korea are very difficult to obtain. Any assessment of the economic landscape of the country has to rely on multiple approaches. In this section, we survey existing literature and economic indicators, and discuss our original analysis using publicly available satellite data in the next section. We start with a brief timeline of developments in North Korea on the economic front to set the context.

A Brief Timeline of Economic Trends

North Korea’s Leaders

Kim Il Sung is the founder of North Korea, and is also referred to as the Suryeong, or Supreme Leader. The first Kim championed the ideology of juche or “self-reliance,” and the state policies of songun or “military first,” policy as well as byungjin or “simultaneous development of the military and economy,” policy. His son Kim Jong Il took on his father’s legacy by continuing to pursue the policy of songun and developing the state’s nuclear weapons capabilities. Kim Jong Un carries on his predecessor’s agendas, but has largely dedicated his efforts to simultaneously developing North Korea’s nuclear weapons capabilities and its economy.

Juche Ideology

The juche philosophy was first introduced into the North Korean ideology by the founding leader Kim Il Sung in a speech to party propaganda and agitation workers in December 1955 (Koh, 1978). He articulated what juche meant in a speech in 1972 (G. Lee, 2003, p. 105):

being the master of revolution and reconstruction in one’s own country . . .
holding fast to an independent position, rejecting dependence on others, using one’s own brains, believing in one’s own strength, displaying the revolutionary spirit of self-reliance, and thus solving one’s own problems for oneself on one’s own responsibility under all circumstances.

Although juche has become shorthand in the West for North Korea’s “policy of self-reliance,” and it indeed reflects the closed nature of its economy, its original intent also embodied nationalism and perseverance in the face of immense hardship (G. Lee, 2003).

Prior to 1991, the North Korean economy was centrally planned and directed by the state bureaucracy. Enterprises were state owned, and supply bottlenecks resulted in unfulfilled production targets. During the decade following the Korean War, the Kim Il Sung government’s strategy focused on heavy industry with output in mining and manufacturing increasing rapidly. This strategy backfired in the late 1960s when rising energy prices and technological changes
favored light manufacturing. The agricultural sector also saw collectivization, with farms being forcibly transferred from individuals to cooperatives. Initial increases in output gave way to widespread food shortages. The economy in the 1980s was heavily reliant on aid, subsidies, and imports of manufactured goods and transportation equipment from the Soviet Union (Habib, 2011).


A crippling famine took place in North Korea in the 1990s under then Chairman Kim Jong Il’s regime. Floods, droughts, general economic mismanagement, and a loss of support arising from the collapse of the Soviet Union combined to make the famine catastrophic. Of a population of roughly 22 million, 2 million were estimated to have died. During this time, the regime tacitly allowed some market activities and private enterprise (although officially banned). This allowed people to find ways to feed themselves, provide for their families, and bring hard currency into North Korea. Given the failure of the public distribution system (PDS) that had previously provided food rations, people had to find other ways to get food, including setting up markets. Once the crisis abated, treatment of the markets that had sprung up oscillated between tolerance and suppression (Sang-Hun, 2020).

North Koreans use the word *donju* to describe the new class of traders and businessmen that emerged during this time. The *donju* invest in construction and state factories needing resources. They also finance imports from China to supply retailers in the *Jangmadang*, which are official and unofficial markets where people buy and sell goods. They operate with “covers,” or party officials who protect their businesses. Some are relatives of party officials (Sang-Hun, 2020).

**The Sunshine Policy**

The Sunshine Policy, formally the “Comprehensive Engagement Policy Towards North Korea,” was South Korea’s policy of rapprochement with the North which began in 1998. On the economic front, this included the establishment of the KIC and the Mount Kumgang tourist region. Many scholars and commentators credit this engagement with the spreading awareness of life outside the country, especially in South Korea, among North Koreans. For example, snacks given as gifts to North Korean workers at Kaesong by their South Korean managers demonstrated the difference in food quality and quantity between the two Koreas (Park, 2017).

**July 1 Economic Management Improvement Measures (2002)**

On July 1, 2002, North Korea initiated significant economic reforms including substantial increases in both prices and wages, shifted away from its price fixing mechanisms and distribution systems, and decentralized economic planning among other structural reforms. Pyongyang called their reforms an “economic adjustment policy,” but many experts questioned if this marked the onset of North Korea’s market transition to a capitalist economy. However, the state argued that these reforms would only solidify its socialist principles while delivering better quality of life for
its citizens. These policy changes were presumably a response to the famine that ravaged the country in the 1990s and a way for the state to “fix” its obvious failures in central economic planning (Ihk-pyo, 2002).

Another critical domestic policy goal through these structural reforms was for North Korea to expand trade with other countries, especially China. Kim Jong Il’s economic diplomacy toward China was critical in bringing initial investments that were much needed to kick-start trade and get North Korea’s economy back on track after the famine of the 1990s (Clement, 2019).

Announcement of the Byungjin Policy (2013)

This announcement was widely seen as giving economic and defense issues equal importance, whereas national defense had been the only priority prior to byungjin. It also increased the political stakes of economic stability and growth because economic success was now tied to the regime’s legitimacy in a way that only military achievements were previously (Ruediger, 2018).

During his New Year speech in 2018, and again at a Plenary Meeting of the Worker’s Party of Korea, Kim Jong Un said the goals of byungjin were complete, and that the party would concentrate on socialist economic construction. Market liberalizations had already started taking place, albeit slowly, and there was a nascent consumerist culture. As of 2018, in Pyongyang, one could find “cars, smartphones, electric bicycles, flat screen TVs, fashion and fancy food and cafes.” This growth may reflect the reforms and development that began in 2013 (Ruediger, 2018).

The developments discussed above gradually led to the state relinquishing its tight grip on the economy. The effect of the unofficial private sector on people’s lives was reflected in the ratio of income between unofficial and official jobs; after 2011, 63.5 percent of the income came from unofficial jobs (Harris, 2017). Roughly 70 percent of North Koreans engaged in private trading, and around 70 percent also said private trading made up the majority of their income (Mah, 2018).

Despite efforts by the state to regulate and limit the Jangmadang, these informal markets have also become a critical monetary lifeline for the state because they generate substantial revenue through taxes and fees. More importantly, the existence of the Jangmadang is potential evidence that entrepreneurship can flourish in the Hermit Kingdom. The Jangmadang in many ways catalyzed the positive effects of free markets, allowing for increased utilization of the North Korean currency, creating market incentives for increased productivity, and even increasing market competition in some regions among merchants. Evidently, North Koreans, as citizens of other countries in other times, respond to incentives. Despite the total failure of the PDS and economic failures of the state, the North Korean’s impressive ability to overcome these challenges through informal channels has caused some experts to claim North Korea is the most “enterprising country” in the world (Hastings, 2016). Given these developments, formalizing and expanding the Jangmadang is a key recommendation we make in Chapter 7, even in the short term.
Box 2.1. The Rise of the Jangmadang

The emergence of informal markets in North Korea called Jangmadang is a challenge to North Korea’s command economy and now serves as a lifeline for North Koreans to purchase critical goods and contrabands smuggled from foreign countries. The State reluctantly legalized the Jangmadang in the late 1990s and early 2000s once its PDS for critical goods failed during the Arduous March.\(^1\) Despite the state’s efforts to regulate these markets and collect taxes, most of the Jangmadang operate illegally through local bribery. Some analyses suggest that bribery may comprise 6–7 percent of North Korea’s GDP (Kim, 2017, p. 190).

In an effort to control the effect of marketization, the central government enacted a set of market protocols in 2002: “People’s Committees in each province, county, and district or neighborhood responsible for the respective commercial industries shall establish one or more markets in an easily accessible location, in accordance with each region’s population size and unique regional characteristics, to be used by the municipal or town residences.” For instance, the protocol allows for 1,200 stalls in a city or town of a population of 50,000–70,000 (Cha and Collins, 2018).

North Koreans have increasingly started using the Jangmadang for food, as opposed to relying on state rations. Noodles, cell phones, television sets, and alcohol are available in these markets. There are currently more than 400 markets throughout the country, estimated based on satellite imagery, and more than a million people work in these markets, according to the Korea Institute for National Unification. A map of the Jangmadang (Figure 2.1) across North Korea shows how these markets have proliferated.

Figure 2.1. Proliferation of Jangmadang in North Korea

This map only shows markets for which the state collects taxes or fees for the government and there are likely many more black-market Jangmadang not captured. Roughly 40 percent of the population is estimated to participate in these black markets. Approximately 80 percent of this commerce is driven by goods from cross-border smuggling with China, facilitated by bribing border guards. International brands such as Coca-Cola can be found, and the state has begun competing with international products in the market for some goods, such as noodles, socks, and cigarettes.

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\(^1\) The North Korean famine of the 1990s is also referred to as the “Arduous March,” a direct translation of the Korean phrase: 고난의 행군. The famine marks the years from 1994 to 1998 during a period of widespread starvation and a collapse of North Korea’s command economy.
Further wage growth has been limited by a lack of access to more goods to invest in businesses and poor infrastructure—from shoddy roads to intermittent electricity. But the state has implemented some reforms to give those with state-owned assets more freedom: Farmers can keep and sell what they grow beyond quotas, and factories can produce more diverse products if they hit revenue targets. The regime is becoming increasingly dependent on the fruits of these reforms, because they demand “loyalty donations” from businesses at the markets. Indeed, the state is in constant need of the hard currency these businesses generate.

According to a few experts, the trend seems to be an inexorable movement “from feudalism to crony capitalism.” The reforms allowing private incomes have created a new class of wealthier people; furthermore, this new wealth has opened a stream of bribes flowing to central government figures. Many of the private sector businesses are housed within or have close ties to government organizations and ministries. This makes reversion to the state-dominated market control increasingly unlikely. Many within the regime are deliberately studying China’s and Vietnam’s reform processes for inspiration for further decentralization. It appears that even without state planning, patterns gleaned from neighbors’ development paths are beginning to play out in North Korea: There is an emergence of conglomerates, akin to Japan’s *Zaibatsu* and South Korea’s *Chaebol* (Harris, 2017).

Although North Korea’s continued move toward private enterprise and the growth of the *donju* class seems set to continue, the implications for the country adopting a more open stance are less clear. The above-mentioned cozy relationship between the government and the *donju* class could continue in a closed context, with the two groups supporting each other to strengthen the wealth and power of both. And even if the government does try to court foreign investment, as it has done in the past by hosting a trade fair, the prevailing “relationship-anchored mode of commerce” has failed to inspire investor confidence (Harris, 2017).

**Socioeconomic Indicators of North Korea**

As mentioned earlier, reliable data on the North Korean economy are not easily available. Statistics Korea, the official statistical agency of South Korea, part of the Ministry of Economy and Finance, periodically publishes major statistical indicators of North Korea as a part of its Korean Statistical Information Services (KOSIS). We summarize the most relevant data from this source (KOSIS, 2017, pp. 139–143; KOSIS, 2019). KOSIS derives most of its economic data from Bank of Korea (BoK) reports estimating North Korea’s economic performance. Critics have challenged the BoK’s GDP estimation methodology previously and North Korea’s heavy concealment of its economic activity is a challenge when estimating their GDP (Brown, 2020). It is therefore best if these numbers are viewed in conjunction with other qualitative and quantitative information that we present.

The GDP of North Korea was 35,671 billion won (nominal) in 2018, which was approximately 29 billion dollars (at an exchange rate of one dollar to 1,100 won), only 2 percent of that of
South Korea. As seen in Table 2.1, this has been a decline from the 2017 GDP, and if the above-mentioned difficulties in 2019 are any indication, this number can be expected to slide further.

**Table 2.1. GDP Estimates (Nominal)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP (in billion won)</td>
<td>33,614</td>
<td>33,949</td>
<td>34,137</td>
<td>36,103</td>
<td>36,382</td>
<td>35,671</td>
</tr>
</tbody>
</table>


North Korea’s GDP per capita adjusted for PPP was estimated in 2015 to be $1,700 (see Table 2.2), compared with South Korea’s, which was over 22 times higher at $38,500.

**Table 2.2. Per Capita GDP (PPP Adjusted)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP per capita (PPP $)</td>
<td>1,800</td>
<td>1,700</td>
<td>1,700</td>
</tr>
</tbody>
</table>


In 2018, North Korea’s estimated population was a little more than 25 million people, less than half of South Korea’s population. In population density, that places North Korea at approximately 214 inhabitants per square kilometer (South Korea compares at 515 inhabitants per square kilometer) (Statista, 2020; Worldometer, 2020). North Korea’s infant mortality rate, which continuously decreased until 1990, began to increase during the famine of the 1990s and reached around 57 per 1,000 live births in 2000. The mortality rate again started to decrease in 2000, but is still much higher than that of South Korea. Between 2010 and 2015, North Korea’s estimated infant mortality rate was 18 per 1,000 live births, whereas that of South Korea was 3. Between 1965 and 1975, the estimated fertility rate was above 4, but it gradually declined.

Based on triangulation given available census data, experts concluded that although fertility rates dropped significantly from 1979 (when it was slightly above three children per woman), these rates remained largely consistent from 1999 to 2009 (hovering around two children per woman). The most significant dip in fertility occurred in the 1990s due to the “Arduous March,” when many North Koreans died from starvation (Spoorenberg, 2014, Figure 1). The increased infant mortality and decreased fertility translated to a dip in the population aged 30–34 years in the population pyramid constructed using the 2008 census (those in their 40s currently). However, as can be seen from Table 2.3, which shows a few relevant demographic indicators for 2018 and 2019, the North Korean population is relatively young, with only 9 percent of the population 65 or older.\(^2\)

\(^2\) Although the fertility rate is measured as live births to women in their reproductive age (15–49), the available crude birth rate data seen in Table 2.3 do not apply this constraint.
Table 2.3. Key Demographic Indicators

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>25.7 million</td>
<td>0.6</td>
<td>20</td>
<td>71</td>
<td>9</td>
<td>28</td>
<td>9</td>
<td>14</td>
</tr>
</tbody>
</table>


In 1998, the estimated life expectancy of a North Korean man was 59.5; it increased to 66.5 in 2018. Life expectancy for North Korean women increased from 66.4 to 73.3 during the same period. By comparison, a South Korean man’s estimated life expectancy was 71.2 in 1998 and increased to 79.7 in 2018. A South Korean women’s estimated life expectancy was 79 in 1998 and increased to 85.7 in 2018 (KOSIS, 2019).

North Korea’s per-capita daily nutrient supply has declined since 1990. Its energy supply decreased to 2,094 from 2,370 calories; its protein supply, to 55.0 from 75.7 g; its fat supply, to 27.1 from 46.2 g. It is estimated that North Korea had 4,800 elementary schools, 4,600 middle and high schools, and 490 universities in 2016. It was estimated that 210 people per 10,000 in the population attended university in 2016, a third the rate of university enrollment in South Korea (KOSIS, 2017).  

All these indicators underscore the poverty of North Korea and the dire need for economic development. Given the low-income levels, domestic savings are unlikely to supply enough capital to the market and foreign investment would be needed to fuel economic growth. The widespread food insecurity also highlights the critical importance of the agricultural sector. Addressing the issue of hunger will also have benefits for health and education.

Table 2.4 shows that in 2016 mining and manufacturing constituted a third of the economy, followed by services and agriculture, forestry, and fishing. In 2018 (for which details on all subsectors are not available), agriculture and services had increased in share at the expense of other sectors. In Chapter 4, we conduct a more detailed sectoral analysis to identify sectors to prioritize for reform.

Between 2000 and 2019, North Korea’s GDP growth rate fluctuated between −4.1 and 3.9 percent. As can be seen in Figure 2.2, the country rarely experienced the sustained growth that developing countries need to eradicate poverty. The significant dips seen in 2006, 2009, and 2017 corresponded to the UN sanctions placed in those years (Carnegie Endowment for

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3 Lee (2019) noted that the North Korean labor is well educated unlike other least-developed countries.

4 The COVID-19 crisis and the floods—likely more damaging than the previous-worst floods of 2007—of 2020 have likely made the economic situation even more dire (Shin, 2021).
Table 2.4. Composition of GDP

<table>
<thead>
<tr>
<th>Percentage Distribution of GDP</th>
<th>2016</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining and manufacturing</td>
<td>33.2</td>
<td></td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>12.6</td>
<td>10.6</td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy and chemical industry</td>
<td>20.6</td>
<td>18.8</td>
</tr>
<tr>
<td>Light industry</td>
<td>13.7</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>31.1</td>
<td>33.0</td>
</tr>
<tr>
<td>Government</td>
<td>22.4</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>8.7</td>
<td></td>
</tr>
<tr>
<td>Agriculture, forestry, and fishing</td>
<td>21.7</td>
<td>23.3</td>
</tr>
<tr>
<td>Electricity, gas, and water supply</td>
<td>5.2</td>
<td>5.4</td>
</tr>
<tr>
<td>Construction</td>
<td>8.8</td>
<td>8.9</td>
</tr>
</tbody>
</table>


Figure 2.2. GDP Growth Rate


International Peace, 2017). The growth rate of each sector had trends similar to that of the overall growth rate (not shown). Electricity, gas, and water supply, mining, and manufacturing were the sectors whose growth rates changed the most between 2015 and 2016. The only sector that grew in 2015 was construction. Government services accounted for the largest share of the services sector. Consequently, the growth rate of this sector was relatively stable. When North Korea is ready for reforms, it is clear that it needs sustained growth and the investment necessary to fuel that growth.
When it comes to infrastructure, North Korea had 5,289 km of railway in 2018, more than South Korea’s 4,074 km, underscoring the importance of railways to the country (KOSIS, 2019). It is estimated that rail transport accounts for 90 percent of freight transport and 62 percent of passenger transport in North Korea. Of this, about 80 percent is electric, and less than 1 percent is underground. About 98 percent of railways are single tracked and more than 70 percent of the rail system was constructed in the era of Japanese colonialism. The average speed of North Korean freight trains is believed to be less than 30 km/h. North Korea had 26,176 km of roads (and only 774 km of it is expressways), compared with 108,780 km in South Korea. It is estimated that less than 10 percent of nonexpressway roads are paved.

In 2016, North Korea’s primary sources of energy supply were coal, hydro, and petroleum, which accounted for about 43.2, 32.3, and 11.8 percent, respectively, of the total primary energy supply of 9,910 tons of oil equivalent. As seen in Figure 2.3, the country’s total energy supply began to decline in 2005 and was the lowest on record in 2015 (8,700 tons of oil equivalent) (Organisation for Economic Co-operation and Development [OECD], 2019). This decline parallels the reduction in the amount of coal spent on the energy supply and is likely associated with the increase in the amount of coal exported. Hydroelectric plants account for about 54 percent

![Figure 2.3. Energy Sources](source: KOSIS, 2017)

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5 Ton of oil equivalent (TOE): the amount of energy released by burning one ton of crude oil; other energy sources include firewood, charcoal, and waste heating that account for about 12.7%.

6 North Korea’s primary energy supply in 2015 was less than that of African countries, such as Zimbabwe, Zambia, and Tanzania.
of the country’s gross generation and thermal plants, 46 percent. The country’s total net capacity factors (a measure of actual to potential generation) were less than 39 percent from 1998 to 2016 and followed a similar trend to that of hydro power (Figure 2.4).⑦

Figure 2.4. Capacity Factors by Generation Type

![Capacity Factors by Generation Type Graph]


North Korea is still using some of the transmission lines installed between the Japanese colonial period and the mid-1970s. Also, it appears that power line carrier communications needed to distribute and transmit electricity have deteriorated to a decrepit condition. North Korea’s electricity grid does not provide consistent power quality, voltage, and frequency, resulting in 5- to 20-percent voltage loss.

Electricity generation and distribution is the weakest link in an already inadequate North Korean infrastructure, and one of the first sectors to target to allow other industries to grow. As we will see in Chapter 6, electricity is one of the key requirements to attract foreign investment.

Although we will examine trade data in greater granular detail in Chapter 4 and rely on different sources, for purposes of comparison, we present a brief summary of North Korea’s trade statistics here. North Korea’s total international trade flows show an overall increase between 2003 and 2014. The international trade in 2014 was the highest on record ($9,954 million), and after that, it began decreasing. This figure accords well with the figure for that year we present in Chapter 4. The amount of trade declined by 23 percent in 2016 relative to 2015, mainly due to its reduced trade with South Korea.

⑦ “The net capacity factor is the unitless ratio of an actual electrical energy output over a given period of time to the maximum possible electrical energy output over that period.” For example, in 2016, hydroelectric dams in North Korea had capacities of 4,701 MW. In the same year, the dams generated 12,800,000 MW, for a capacity factor of: $12,800,000/(4,701 \times 365 \text{ d} \times 24 \text{ h/d}) = 0.3108$. 

16
Box 2.2. The Kaesong Industrial Complex

The KIC was a product of South Korea’s President Kim Dae Jung’s “Sunshine Policy” which aimed to improve relations between North Korea and South Korea. President Kim hoped to develop an industrial park in North Korea where South Korean businesses could manufacture products with North Korean labor. The vision was to eventually provide the expertise and basic infrastructure needed to encourage liberalization of North Korea’s economy and subsequently ease relations on the peninsula (Manyin and Nanto, 2011).

The potential opportunities the KIC might bring to both countries looked promising. In 2004, the Hyundai Research Institute projected that North Korea would receive approximately $9.55 billion in economic gains over nine years if the KIC were to operate at its maximum capacity. Compared with North Korea’s total exports of $1.8 billion and total imports of $3.6 billion at the time, such prospects seemed appealing for Pyongyang. Furthermore, South Korean companies operating in the KIC could apply for below-market interest loans, receive tax breaks, and gain access to a cheap pool of labor (Manyin and Nanto, 2011). Approximately 54,000 North Koreans and several hundred South Koreans were employed at KIC and it was the biggest contributor to trade between the two countries at that time (BBC News Staff, 2016). The arrangement seemed to be a win-win for both countries, for the people of North Korea and for businesses in the South (Green and Yongseok, 2019).

The KIC is located in the city of Kaesong in North Hwanghae Province—60 km away from Seoul and 160 km from Pyongyang (Figure 2.5). The area of the complex is 3.3 km$^2$, large by the world average of 1 km$^2$ for SEZs (United Nations Conference on Trade and Development [UNCTAD], 2019).

**Figure 2.5. Location of the Kaesong Industrial Complex**

SOURCES: U.S. State Department, Office of the Geographer; Google; © 2021 Maxar Technologies.

Out of the 125 firms in KIC, 73 firms (59 percent) produced textiles and clothing, 24 firms (19 percent) metals and machinery, 13 firms (10 percent) electrical and electronic products, 9 firms (7 percent) chemical products, and 6 firms (5 percent) other products. The complex was connected to South Korea through a single-tracked railway and a four-lane road. Electricity was supplied from South Korea to the complex.

The labor productivity of North Korean workers at the complex was estimated at 71 when that of South Korean workers’ productivity was normalized to 100. It was higher than that of Chinese workers at Qingdao economic and technological development zone and that of Vietnamese at Tan Thuan export processing zone in Ho Chi
Minh City (Lee, 2011). It is important to note that unit labor costs, defined as wages divided by labor productivity, can still be low in these SEZs as long as the advantage of lower wages outweighs the disadvantage of low labor productivity.

Throughout its existence, however, the KIC came with significant political baggage for the South Korean government. Although one of South Korea’s chaebols, the Hyundai Asan Corporation, spearheaded the initial development and investment of the KIC, significant contributions also came from the South Korean government. This did not always bode well with critics who saw the KIC as merely another conduit to funnel more money into the Kim regime. Furthermore, the motivation for South Korean companies that operated in the KIC remained unclear whether economic profitability existed, or if companies elected to be part of the program for political reasons (International Crisis Group, 2019). In addition, unilateral demands of Pyongyang to raise the minimum wage for its North Korean laborers, trade agreement complications with the United States, and fluctuating political tension on the peninsula have brought many headaches for the South Korean government (Manyin and Nanto, 2011).

The challenges with the KIC persisted across several South Korean presidencies until President Park Geun Hye closed the complex permanently in 2016 after numerous North Korean military provocations. Experts estimated that this closure costed Pyongyang approximately $130 million in hard currency earnings annually (Noland, 2016).

In summary, North Korea has been dragged into market reforms out of necessity, even if not by design. But it has a long way to go given the poverty evident from its socioeconomic and infrastructural indicators. Electricity and agriculture emerge as critical sectors needing attention. The need for economic growth and development, and foreign investment in particular (given low-income levels) is quite evident.

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8 A later study argued that KIC was beneficial for South Korean firms with subsidiaries there, increasing revenues by 8 percent, fixed assets by 26 percent, and profits by 11 percent.
3. Eye in the Sky: Tracking SEZ Activity Using Satellite Data

When trying to gauge economic activity in North Korea, relying on its government statistics is problematic due to their often-exaggerated nature. Alternatives have been developed, including the utilization of trade statistics and defector interviews. These data, along with estimations of exchange rates and commodity prices, are used by the BoK to create key North Korean economic data, which we discussed in the previous section. Satellite data and imagery provide another alternative. These data avoid the pitfalls inherent in the aforementioned data: fabrications from the government, faulty memories of defectors, a dearth of quality and quantity, an inability to access many remote locations, and other errors and imperfections. Satellite imagery can corroborate whether state media or other data sources are correct, provide estimates of certain types of economic activity such as mining and manufacturing, offer insights about locations otherwise off limits to outsiders, and even provide estimates about how and when certain economic activities take place. The primary shortfall of satellite imagery is its inability to capture much of the economic activity driven by the services sector and the difficulty of approximating black-market trade (Melvin, 2016).

After providing an assessment of the North Korean economy using existing descriptions and data in the previous section, in this section we take a novel approach to estimating and tracking economic activity over time in eight key SEZs by using nighttime light emissions from these zones. This approach has been shown to be useful in many contexts (Chen and Nordhaus, 2011; Chen and Nordhaus, 2019; Elvidge et al., 1997). SEZs have played an important role in North Korean economic engagement with international investment and trade; the previous section discussed the KIC, for instance. As we will see in Chapter 6, investment frameworks often call for SEZs as a crucial element to deploy while framing industrial and investment policies. Although there is more information about economic performance and activity in SEZs than there is about the rest of the North Korean economy, such information is still quite limited. This is the crucial gap we seek to fill with our original analysis.

We process these data to correspond approximately to economic activity as defined in GDP terms. However, it is important to not interpret the resulting estimates too literally. This analysis does not purport to offer precise economic assessments of North Korean SEZs in a way that permits quantitative comparison with urban areas in other nations. Rather, this analysis should be used to supplement the qualitative understanding and other measures of how the various SEZs have developed over previous decades.
Methodology

To compile these estimates, we use two different datasets. For the years 1992 through 2013, we use data collected by the U.S. Air Force Defense Meteorological Satellite Operational Line Scan (DMSP OLS) program and processed by the National Centers for Environmental Information National Geophysical Data Center into annual average values (Earth Observation Group, 2010; National Centers for Environmental Information, undated). For the years 2014 through 2019, we use data from the visible infrared imaging radiometer suite (VIIRS) onboard the Suomi National Polar-Orbiting Partnership spacecraft (Earth Observation Group, 2020).

Both datasets have a spatial resolution of 90 arc seconds—which corresponds to a cell size of approximately 0.9 km at the equator, becoming narrower as one moves toward the poles. We reproject and resample these data using bilinear interpolation to produce a global layer of low distortion 1 km\(^2\) cells through the use of the Fuller Dymaxion projection in the ArcGIS Spatial Analyst software.

An overview of nighttime lights comparing North Korea and South Korea in October 2019, using the above data is shown in Figure 3.1. Except for Pyongyang, there is very little luminosity in the rest of North Korea. The contrast with the more brightly and extensively lit South Korea is

**Figure 3.1. Nighttime Light in October 2019 for North Korea and South Korea**

NOTE: The data were obtained from calculations using VIIRS data.
The low luminosity in North Korea poses problems in translating it to economic activity using methods developed for other countries, so this is a challenge we need to tackle.

We first need to map luminosity to economic activity using a benchmark. To do this, we calibrate the DMSP OLS data (1992–2013) against U.S. population and economic performance data. The DMSP OLS data are top censored by light saturation at relatively low light levels—reaching maximum value at a level that is equivalent to the outer suburbs of a U.S. city. To handle this limitation, we use a two-step process, handling urban and rural areas differently. For nonmetropolitan areas, we use U.S. Bureau of Economic Analysis data on state and metropolitan GDP along with block-level population data from the U.S. Census Bureau to compute an average GDP per capita for the nonmetropolitan areas of each U.S. state. We then apply these average numbers to produce an estimate of total GDP for every U.S. census block and correlate that number with DMSP OLS light levels to produce a look-up table relating light to economic activity for the nonsaturated parts of the DMSP OLS range. For metropolitan areas, we draw on economic geography theory to relate the size and shape of each light-saturated urban area to its level of economic activity—calibrating this estimation against U.S. Bureau of Economic Analysis estimates of GDP for U.S. metropolitan regions. This allows us to extrapolate the higher light and activity values that were lost to saturation for urbanized areas. We then substitute the extrapolated values for the saturated values and apply the resulting calibration to the global dataset. We verify and refine the results by comparing to the World Bank national level estimates of GDP for all other countries. Note that the World Bank does not produce estimates of GDP for North Korea, so we rely on the basic calibration (without refinement) for the country. Finally, we use a 5-year moving average to smooth values for urbanized areas (defined as a contiguous light-saturated area) to reduce regional noise in the light data across the full global dataset and the time span of 1992–2013.

We extend the data series from 2013 to 2019 by mapping the calibration developed with the DMSP OLS data for 2013 to the VIIRS data for the same year and then applying this calibration to the successive years 2013–2019. Although the VIIRS data are more consistent and cover a much wider dynamic range (with meaningful values even in the center of cities), they have limitations as well. Because publicly released VIIRS data have not been composited into annual average values, we use monthly values for October of each year. This shorter measurement period also adds a degree of noise to all estimates. We find that the intercalibration between DMSP OLS and VIIRS works best at low to medium light levels—performing less well in well-lit and economically productive urban cores. This does not present a major problem for the current analysis, where Pyongyang is the only urban center that is large enough to be impacted.

Both datasets have a definite “noise floor” which inhibits meaningful estimation at very low light levels because not enough light is being produced by human activity to stand out against the

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1 We do not use the BoK GDP for North Korea for verification, because most of the population lives in areas with zero light emission. Besides, producing independent estimates of economic activity for North Korea is the nature of our enterprise.
background light scattered back from the moon and other natural sources. Low levels of
economic development and associated outdoor lighting use in North Korea make light-based
economic activity estimates infeasible for many of North Korea’s towns and cities. We find the
method to be workable for larger cities and for more highly industrialized areas. As seen in the
left panel of Figure 3.2, Pyongyang is the dominant location of economic activity (as seen by
the height of the cone), with a smattering of low-level activity elsewhere. The population levels
in 2018 are plotted in the right panel of Figure 3.2, with the peaks of the cones again indicative
of population levels (Rose et al., 2020). Unlike many other countries, not all population centers
are hubs of economic activity.

**Figure 3.2. Light-Based Estimate of Economic Activity (Left) Compared with Population (Right)**

![Maps showing economic activity and population](image)

NOTE: The left panel data were obtained from calculations using VIIRS data; right panel data were obtained
from Rose, 2020.

The reasoning for our overall approach (as is the case in similar analyses that map luminosity
to economic activity) is that the human desire for nighttime lighting is fundamentally biological
and people will tend to demand lighting as long they can afford it, regardless of culture. Nighttime
light can be seen as a proxy indicator for the level of development in an area. It is not necessarily
a direct by-product of economic activity (much of which could take place during the daytime),
but rather an indicator that combines infrastructure development, market and political power,
industrialization, and other indicators that tend to correlate with higher levels of output.
Although the calibration of nighttime lights to GDP is based on U.S. data because it is the
only case where detailed subnational annual GDP estimates are available for 50 states and 384 metropolitan areas, the result is then verified across a range of countries and found to be reasonably consistent with national estimates, where available. The fact that our procedure produces reasonable results across a very broad range of countries with a wide range of development levels, population densities, and economic structures is evidence in favor of this assumption. It produces reasonable estimates for countries such as Laos and Vietnam that might be taken as better proxies for North Korea.

However, the procedure does tend to underestimate countries with extremely low levels of development because large portions of their population live in areas with so little development that the light they emit cannot be distinguished from background. For this reason, our analysis applies primarily to the SEZs (which are centers of activity with measurable light) and should be taken as relative rather than absolute estimates of activity. Greater light emissions from an SEZ may be indicative of several economic factors within the SEZ: The electricity supply is more reliable, electricity supply in that area is of higher priority than competing areas, more industrial infrastructure has been built or is in regular use (even if only during the day), or that people have sufficient economic and political power to obtain street lighting. As we will see in Chapter 6, SEZs will form the cornerstone of industrial policies we recommend; therefore, the application of our methods to SEZs is also the most relevant one for our purposes.

Findings

Given the strengths and limitations of the light-based economic activity estimation method, we focus the current analysis on a collection of SEZs, which have significant population densities as well as elevated levels of industrialization for at least parts of the 28-year range covered by the data. Specifically, we reconstruct the economic history of the Rason, Chongjin, Hyesan, Shinuiju, Wonsan, Nampo, Songnim, and Kaesong SEZs.

Four snapshots of economic activity in North Korea, for the years 1992, 2000, 2010, and 2019 are shown in Figure 3.3, with the SEZs highlighted in red. Although there are occasional peaks, they are still dwarfed by Pyongyang; therefore, we plot economic activity for each of the SEZs to understand their performance over time.

By summing activity within each of the selected SEZs for each year, we can track the economic trajectory of each of these SEZs. The graphs in Figure 3.4 display estimates of economic activity for each of eight SEZs between 1992 and 2019. The units shown are thousands of constant 2013 U.S. dollars. It is best not to take the absolute dollar levels literally, given that they likely contain significant error which is extremely difficult to quantify or even estimate.²

² We can get a sense of the (limited) precision of the mapping between the OLS and VIIRS estimation methods by comparing results in each SEZ for the year 2013, where estimates can be made from both datasets. These estimates are in general agreement for most SEZs—with a disagreement of less than 50 percent in all cases except Chongjin (63 percent), Songnim (103 percent), and Rason (209 percent).
Figure 3.3. Four Snapshots of Light-Based Economic Activity for North Korean SEZs

NOTE: The data were obtained from calculations using DMSP OLS and VIIRS data.
Figure 3.4. Light-Based Economic Activity of North Korean SEZs (1992–2019)

NOTE: The data were obtained from calculations using DMSP OLS and VIIRS data.
However, the relative values and how they change over time help us to gain a more complete picture of activity in these areas.

**Kaesong**, discussed in detail in Chapter 2, is probably the best known of the North Korean SEZs, being situated adjacent to the demilitarized zone quite close to Seoul. The light analysis shows nearly no activity until the early 2000s, then a period of explosive growth though the mid-2000s, productive work in the late 2000s, suffering disruptions starting in 2013, and abruptly shutting down in 2016 (Ruediger, 2016). We note that the estimated peak economic output of nearly $180 million estimated in 2012 is consistent with published numbers indicating that companies working in the Kaesong Industrial Region paid salaries (to the North Korean government) of approximately $90 million for that year.

**Nampo** is a port city on the Taedong River just south of Pyongyang. We see its economic activity fluctuates over time, reaching a peak of activity in 2004 after which it ceased to be a “Directly Governed City” (“Chikhalsi”) and seemingly became less active. Its recovery may be linked to its designation in 2010 as a “Special City.” Although Nampo is not specifically a coal port, within its city limits exists a large coal-transfer and bunkering facility from which most of North Korea’s bulk coal exports originate. Furthermore, U.S. satellite agencies found that North Korea likely conducted numerous illicit ship-to-ship transfers of refined petroleum-related goods at the Nampo Port in 2018, despite sanctions placed on those types of products by the United Nations (which might explain the upsurge in numbers from 2017 to 2018 in the charts above) (Silberstein, 2018). Furthermore, activity at the Nampo Coal Port went up in 2020 which suggested that illicit coal trade had also resumed (Makowsky and Liu, 2020).

**Rason** is a port city in the Northeastern part of the country near borders with both China and Russia. It was designated as the first SEZ in North Korea in 1991 and was called the Rajin-Sonbong Free Economic and Trade Zone. Light emissions indicate limited growth for the first two decades of its existence but show a major period of growth beginning in the early 2010s. In the first twenty years, Rason only attracted a modest amount of investment because of the lack of transportation, energy, and basic infrastructure (NCNK, 2014). This is consistent with the beginning of a new development effort for the zone in 2010 and simultaneous start of efforts by China to build new electricity transmission lines to the zone. In 2010, North Korea and South Korea announced a joint venture in Rason to produce canned and processed food for exports (Digital Chosun Inc., 2010). In years subsequent to 2011, China boosted investments in Rason with infrastructure building and port usage, Russia started its test run for Rason coal shipments, and the annual Rason International Trade Fair events aligned with the upsurge in economic output seen in the chart above (KCNA Staff, 2015a; Yonhap Staff, 2015; Solomon and Page, 2011).

**Songnim** is located on the Taedong River, upstream from Nampo. It is the smallest and seemingly the least developed of the SEZs examined here. Songnim was planned to be an export processing zone that would also have warehousing and freight transport services. The plan (as of 2014) was to have raw materials from Songnim and Nampo ports brought for processing (Pyongyang Times Staff, 2014). It appears that activity in Songnim declined in the mid-1990s,
remained at a relatively low level of output until the later 2000s, and then recovered through the 2010s to reach a level comparable to that in 1992.

**Wonsan** is a port city on the Eastern side of the Korean Peninsula. After remaining relatively static from 1992 into the mid to late 2000s, it has seen considerable growth since then, possibly driven by its designation in 2015 as the “Wonsan-Mount Kumgang Tourist Region” (KCNA Staff, 2015b), a special tourist zone.

**Chongjin** SEZ is located in North Korea’s third most populated metropolitan region. It also houses the Kim Chaek Iron and Steel Complex which is North Korea’s largest steel mill, a power plant, and Russian and Chinese consulates (Abrahamian, See, and Xingyu, 2014). The boundaries of this SEZ changed several times (notably in 2014 and 2015), and in both cases included multiple disconnected parts (Abrahamian and Melvin, 2015). For this reason, we analyze the whole Chongjin metropolitan region, which is intimately bound up with the SEZ. The region was hit hard by famine in the 1990s, and this was reflected in what appears to be a significant economic decline through that decade. The region appeared to have remained depressed through the 2000s but had seen some growth in 2010, though this growth may not have been sustained over the past two or three years.³

**Sinuiju** sits on the Chinese border across the Yalu River from the Chinese city of Dandong. The Sinuiju Special Administrative Region was established in 2002, but a series of administrative and political issues have kept its status from being fully implemented. Light-based economic activity seems to have increased markedly in the years after 2002 (starting in 2004) and reaching a peak in 2011, only to decline again after that point—showing a possible recovery starting in 2016 (NCNK, 2014).

**Hyesan** sits near the center of the North Korean border with China. Its primary activity is copper mining, though the mine has been repeatedly flooded due to lack of electricity to run dewatering pumps. After being flooded in the early 1990s, the mine was recovered in the late 1990s, leading to a modest recovery in observed economic activity. It also has export processing, modern agriculture, and tourism (situated near Mount Paektu, revered by North Koreans) (Abrahamian, See, and Xingyu, 2014). Activity appeared to peak in the late 2000s and decline again until about 2016, when the area seems to have begun a period of renewed growth in activity as indicated by nighttime lights.

Table 3.1 summarizes a few key characteristics of the SEZs discussed above: the approximate peak output, the year in which the peak was realized, and the main sectors and activities in the SEZ. A few of the sectors prevalent in the SEZs, most notably mining and light manufacturing, are identified as priority sectors to develop in Chapter 4, and others such as electricity and transportation, which are crucial for effective SEZ operation, are identified as prerequisites for development.

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³ The Wanxiang Group invested in the copper production in the mid-90s.
Table 3.1. Key Characteristics of North Korean SEZs

<table>
<thead>
<tr>
<th>SEZ</th>
<th>Approximate Peak Output (Constant 2013 USD)</th>
<th>Year of Peak Output</th>
<th>Main Sectors/Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaesong</td>
<td>160,000</td>
<td>2011</td>
<td>Clothing and textiles, car parts, and semiconductors</td>
</tr>
<tr>
<td>Nampo</td>
<td>23,000</td>
<td>2017</td>
<td>Major shipment port and coal port</td>
</tr>
<tr>
<td>Rason</td>
<td>70,000</td>
<td>2016</td>
<td>Coal shipment</td>
</tr>
<tr>
<td>Songnim</td>
<td>90,000</td>
<td>2019</td>
<td>Export processing zone</td>
</tr>
<tr>
<td>Wonsan</td>
<td>82,000</td>
<td>2019</td>
<td>Tourism</td>
</tr>
<tr>
<td>Chongjin</td>
<td>120,000</td>
<td>2017</td>
<td>Steel</td>
</tr>
<tr>
<td>Sinuiju</td>
<td>450,000</td>
<td>2011</td>
<td>Not available</td>
</tr>
<tr>
<td>Hyesan</td>
<td>150,000</td>
<td>2019</td>
<td>Copper mining</td>
</tr>
</tbody>
</table>

The linkage between nighttime light and economic activity may be weaker in North Korea than it is in many other countries for a variety of reasons. In particular, although in most countries the use of outdoor light is determined by personal preference, resources, and market conditions, in North Korea such lighting is likely to be controlled by government policy. This may lead to more abrupt shifts in lighting and to changes that are not directly linked to changes in economic conditions. For instance, during the Great Famine and North Korea’s economic slump during the 1990s, its electricity consumption decreased by more than half from 33 billion kilowatt hours (BkWh) to 16 BkWh by 2000. Electricity shortage continues to be a chronic issue in North Korea. In 2015, a major drought caused North Korea’s electricity consumption to drop to 11 BkWh for that year—only a third of its consumption in the 1990s. North Korea’s electricity infrastructure suffers from inefficient generation and transmission creating major shortage issues in the country. Most electricity has to be generated near users because long-distance transmission is not possible in most regions in North Korea. These types of limitations led to only 27 percent of the overall population receiving electricity in 2016 (U.S. Energy Information Administration, 2018). Despite these limitations, the observed economic trajectories of eight areas within North Korea that have been designated as SEZs of one type or the other during our study period of 1992–2019 seem to align well with the known economic histories of these regions.

The use of a novel technique to gain a window into economic activity in North Korea for which reliable data are hard to obtain is of independent interest. But more important for our purposes is the focus on economic activity in SEZs. SEZs have played an important role in existing international investment arrangements that North Korea has with other countries. Therefore, they appear to be useful places to build on existing infrastructure and grow the economy. As seen in Figure 3.3, except for Pyongyang, SEZs do show significant light-based activity. The performance of these SEZs, at least at their peaks, shows the potential they have to form a crucial part of industrial policies for North Korea’s economic development, such as the
ones we discuss in Chapter 6. However, symptomatic of the country as a whole (as seen by the volatile GDP growth rates in Figure 2.3), Figure 3.4 shows SEZ activity has also fluctuated wildly. Indeed, our recommendations are aimed at not only building on previous SEZ experience but also bringing stability to the growth process by improving operations in SEZs, developing investment agreements, and building legal frameworks.
4. Priority Sectors to Target

In this section, we consider which industries may lead the way in spurring economic growth in North Korea during the early years of market-oriented reforms. We considered many factors in selecting these industries. In Chapter 2, we examined the current state of the North Korean economy and which sectors presently make up the bulk of the economy. In Chapter 3, we combined satellite data with knowledge of the history and geography of industries within North Korea to try to get some evidence on economic activity in SEZs, through time. In this section, we first study trade data gathered from North Korea’s trading partners to get a sense of where the country might have a comparative advantage given its current structure and conditions. Further, we consider what we know about existing infrastructure (including SEZs such as Kaesong) and the skills, knowledge, and abilities of the North Korean people. Finally, we look at what sectors might be necessary prerequisites for the development of other sectors in the future. For example, a well-developed electricity sector is a necessary prerequisite for the development of industries focused around information technology and computers; a business process outsourcing firm will not locate a call center in a region without reliable, consistent electricity. Based on these considerations, we discuss the sectors we believe are best placed to lead economic growth in North Korea: agriculture, electricity, transportation and logistics, mining, and light manufacturing.

Insights from Trade Data

When determining the best course of action for North Korean development, it is important to have a sense of what the country is currently good at producing. Because we do not have reliable data on North Korean industrial output over time, to get a better sense of what the country is relatively good at producing, we examined what it is trading with other countries. Basic trade theory postulates that countries will trade what they are relatively good at producing—sectors in which they have a “comparative advantage”—for what they are relatively poor at producing. This is true even if its trading partners, such as China or South Korea, have the “absolute advantage” at producing all goods. Countries can get access to more of all goods if they specialize and trade according to their comparative advantage. Unfortunately, our picture of North Korea’s actual strengths is highly distorted because of various restrictions, both internal and external. Consequently, our analysis will provide only an approximate picture of where North Korea’s true comparative advantage might lie.

We used trade data from the International Trade Centre, a joint venture between the United Nations and World Trade Organization (WTO). The East-West Center and Massachusetts Institute of Technology’s Observation of Economic Complexity also provide North Korean trade data; however, their data are created by processing International Trade Centre data through a proprietary data cleaning process. We used the raw International Trade Centre data as the other data sources do not provide information about their cleaning processes.
International Trade Centre trade data are available at three levels: H2, H4, and H6—where the numbers reflect the digit levels of the harmonized system (HS) of trade data. In the figures presented, we use the H2 level, which is the highest level of aggregation, because our focus is on sectors instead of individual products.¹ Annual volatility is also higher among categories at more detailed levels of classification. For example, there are many apparel categories at the four-digit level that would not appear as a top North Korean export; however, “articles of apparel” at the two-digit level is consistently among the top-ten exports. All North Korean trade data are “mirrored.” Mirrored data are compiled using data from North Korea’s trade partners. North Korea does not provide trade data itself.

North Korea’s trade is heavily weighted toward China. In 2010, China made up less than 50 percent of North Korea’s total trade (imports and exports), but since then China has made up an increasing percentage of trade flows. As seen in Figure 4.1, especially since the sanctions of 2017, China has represented 90 percent of North Korean trade flows. Pre-2017, other important trading partners for North Korea included South Korea, India, Russia, and Thailand.

**Figure 4.1. North Korean Trade Flows by Trading Partner, 2010–2019**

SOURCES: International Trade Centre (undated); East-West Center (undated).

¹ Note that HS codes are commodity codes and we are making assumptions about which industries they relate to in using the trade data to inform our selection of priority industries. At the two-digit level, we feel that the category names of the HS codes provide a good indication of which industries would produce such goods. For a formal correspondence between HS codes and SIC/NAICS codes, see Pierce and Schott (2012).
As discussed above, exports reflect goods for which the country has the necessary infrastructure, capital, and labor skills for production and trade, whereas goods that are mostly or entirely imported are likely not the strengths of the country. For example, as seen in Figures 4.2 and 4.3, which show average volumes of exports and imports, respectively, between 2010 and 2019, North Korea exports mostly natural resources and raw materials, food commodities, and light manufacturing such as apparel and electrical machinery while importing advanced manufactured goods. Mineral fuels, the largest export, include coal, which is one of the primary exports of the country. Because of the country’s existing capacity in these areas, they represent sectors that would be priorities for any North Korean growth strategy. We examine prospects for North Korea in raw materials and light manufacturing in greater detail below.

Although North Korea does export light manufacturing goods, they may need additional resources or expertise to move into higher value-added manufacturing and we note that this may be a longer-term, aspirational sector. The Kim government has hoped to move to higher value-added goods, and the Chinese government, North Korea’s primary trading partner, has stymied this strategy according to some reports (Clement, 2019).

**Figure 4.2. Top Ten North Korean Exports by Average Volume, 2010–2019**

The sectors that make up North Korea’s imports overlap to a large degree with its exports. The top imports, like the top exports, include natural resources, food commodities, and light
manufacturing. Note that this overlap is consistent with North Korea exporting low value-added four-digit goods (raw material) and importing higher value-added four-digit goods (finished goods) within the same two-digit industry. Further evidence that North Korea is low on the added-value manufacturing chain comes from the fact that the only three top imports in Figure 4.3 not appearing in the top exports list in Figure 4.2 are plastics, rubber, and man-made filaments, which are higher value-added manufactured products.

**Figure 4.3. Top Ten North Korean Imports by Average Annual Volume, 2010–2019**

![Bar chart showing top ten imports by average annual volume from 2010 to 2019.](image)

source: International Trade Centre (undated).

Moving from average volumes to time series data, Figures 4.4 and 4.5 present the dollar value of the top ten exports and imports, respectively, by year for North Korea from 2010 to 2019. Confirming the figures from average volumes, natural resources (mineral fuels, ores, salt, and iron), aquaculture (fish and crustaceans), and light manufacturing (apparel and machine parts) make up the top exports. The same is true of imports, except for a few items, like plastics and rubber, which are inputs to manufacturing, and animal fats, which are for consumption. As the figures indicate, the categories that were, on average, the most traded goods in dollar value maintain relatively stable levels before the 2017 sanctions. The exception is the most traded good, mineral fuels, which showed greater year to year volatility. Exports rose dramatically from 2010 to 2011, whereas imports fell from 2013 to 2014.
Figure 4.4. North Korean Exports over Time, 2010–2019, by Sector

Figure 4.5. North Korean Imports over Time, 2010–2019, by Sector

SOURCE: International Trade Centre (undated).
Priority Sectors

In this section, we discuss a few sectors that we believe North Korea should target over the short and medium run to increase its prospects for economic growth and development. As noted, these suggestions are based on a combination of sectors in which North Korea already has a comparative advantage, aspirational sectors it could plausibly move into eventually that would help the country grow more rapidly, and sectors that are necessary prerequisites for growth of other industries. Thus, we conceptualize this as a staged prioritization: North Korea should first focus on agricultural production to ensure the basic food needs of its people are met and they are productive; it should then turn to the sectors necessary to spur growth and development in other industries, electricity and transportation; finally, it should further develop sectors in which it already has some strength that may be important for international trade such as mining and light manufacturing. As the outside world changes and as North Korea grows and develops, the set of priority industries that it should target to maximize economic growth will likely change.

Agriculture

Agriculture is an important industry to prevent the type of food insecurity discussed in earlier sections that North Korea experienced in the 1990s and may be experiencing again today (Nebehay, 2020). Although North Korea has a large agricultural industry, it is incredibly inefficient. Farmers do not have access to much modern machinery or fertilizers. Improving agriculture by using the state-of-the art techniques and equipment would increase yields dramatically and spur economic growth. In this way, a relatively low-cost investment could pay huge growth dividends and provide early and visible successes to help maintain momentum through the difficult transition period necessary to enact more complex reforms.

Because we do not have good internal data, it is difficult to make recommendations about exactly which sectors within agriculture the country should prioritize first. Given recent reports of widespread food shortages (Nebehay, 2020), priority sectors should probably include staple foods such as rice and grains. According to the trade data, North Korea exports relatively high amounts of fruits and vegetables and aquaculture products (such as crustaceans). These would likely also be areas of prioritization within agriculture.

Land reforms would provide another catalyst for growth in the agricultural industry and were integral to increased production in China and the Eastern Bloc. North Korea has taken some tentative steps in this direction, such as allowing people to sell for profit food they grow in excess of quotas (Cronin and Silberstein, 2018). Agricultural products already make up a significant portion of North Korean exports; North Korea should build on this strength by aligning farmers’ incentives through private property rights.
Electricity

To accelerate the development of other industries as well as provide a higher standard of living to its people, North Korea should invest in its electricity sector.2

As discussed in the analyses of nighttime light data in Chapter 3, North Korea shows very little nighttime electricity use compared even to other countries that are believed to be at its same level of economic development. It is likely a result of direct limits on electricity usage and the poor state of power generation and transmission equipment. Regardless of the cause, ensuring reliable and consistent electricity to the most productive areas of the country should be a priority of the government in Pyongyang. As we will see in Chapter 6, a stable supply of electricity ranks highly in investor needs. North Korea has abundant coal resources, but much of it is exported. Historically, North Korea relied on hydroelectricity, but recent droughts have shown that this might not be a resilient development strategy.

Transportation and Logistics

An efficient transportation and logistics industry is a necessary input for many other industries, both within countries and across borders. Reliable, low-cost transportation can help to connect consumers to multiple retail markets, which promotes competition; connect suppliers to buyers, which increases efficiency and productivity; and connect individuals to different parts of the country, which promotes the efficient allocation of labor as well as fostering innovation and creativity. Several researchers have studied the effect of transportation networks on various aspects of economic development and found positive effects from the increased infrastructure (among many see Donaldson, 2018; Donaldson and Hornbeck, 2016, Herrendorf, Schmitz, and Teixeira, 2012; Ma, Niu, and Sun, 2021; de Soyres, Mulabdic, and Ruta, 2020).3 North Korea’s location also makes it ideal for connecting consumer product powerhouse South Korea to large consumer markets in China and Russia by rail and road. The country already has an extensive rail network, although it has fallen into disrepair due to a lack of investment. Investing in trains, roads, ports, and trucks could provide the country with much needed infusions of foreign currency and help catalyze further development.

Mining

North Korea is endowed with large deposits of mineral resources, including magnesite, zinc, tungsten, coal, iron, uranium, limestone, and rare earth minerals. The country’s stock of minerals

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2 Dinkelman (2011) found that electricity was important for increasing employment in South Africa and similar mechanisms would likely lead to a positive effect in North Korea as well.

3 Note also that some authors have found small or negligible effects of transportation on economic development. Asher and Novosad, 2020, for example, found little effect of rural road construction on agricultural outcomes, income, or assets and only small effects on village employment. However, on balance, the literature seems to mostly support a fairly large positive effect of most forms of infrastructure on development.
has been valued at US$6–10 trillion (Lee, 2019). In past decades, neighbors such as Russia and China have treated North Korea as a client state from which they could extract inexpensive resources. Currently, mined resources, especially coal, are the largest source of export revenue received by the country. Investing in modern machinery and aligning incentives of workers and managers could increase the productivity of North Korean mines, allowing the country to use the resulting revenues to fund other development efforts. Minimizing corruption and working with trading partners and the international community could also allow North Korea to stop selling its minerals for undermarket rates.

**Light Manufacturing**

Although in the long run North Korea should aim to produce more high value manufactured goods, light manufacturing is a good place to start given its current strengths. Textiles and garments are already the second-largest component of North Korea’s exports after minerals. The country also produces cigarettes, playing cards, and other relatively simple, low-value items. Many other Asian countries began with light manufacturing, which helped them to develop the skilled labor, capital, and organizational expertise to then move up the value chain or develop more advanced manufacturing capabilities.

As a testament to North Korea’s prowess in light manufacturing, other countries such as China and South Korea have already utilized the cheap labor, with relatively high productivity, in North Korean SEZs to manufacture goods for their home markets. China has explicitly used North Korea to do its most basic manufacturing, hoping to keep North Korea from developing a more sophisticated industrial base (Clement, 2019).

Similarly, many North Korean workers currently work for the regime in other countries. North Korea could benefit from a cheap and relatively well-educated labor force by bringing these workers back home (Lee, 2019). Indeed, the workers are skilled enough that many have been sent around the world to work in countries such as Poland, Russia, and China, with remittances sent home to the state (Aldag, 2017; Goodman, Sang-Hun, and Berendt, 2017; Kim and Denyer, 2019). One estimate approximated that 60,000 North Korean laborers are working in 20 countries around the world providing remittances (Boonen et al., 2016). Creating opportunities for these workers to bring their skills back home to work in North Korean factories could benefit both the workers and the broader economy.

Although we argue that North Korea should prioritize light manufacturing, it may want to explore the potential of someday moving into heavier manufacturing as well. Although North

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4 Many have argued that this work system is tantamount to slavery. North Korean workers’ experience and education, cut-rate prices, and a strong work ethic mean they have wound up in labor-camp-like facilities in many higher-income countries. In Poland, a NATO ally, North Koreans worked in shipyards. These exchange programs were remnants of when both countries were communist. At the end of 2019, Poland said that it would no longer take North Korean workers.
Korea does not engage in a lot of heavy or advanced manufacturing at present, the Japanese built significant industrial facilities in North Korea as a colonial power during World War II. North Koreans further developed manufacturing related skills by making products for the USSR during the Cold War. It was believed to have had a superior economy to South Korea until the 1970s and still has much of the industrial base from that time. Although still a nascent industry in many ways, North Korea actually had the largest industrial complex in Northeast Asia in the 1930s (built by the Japanese) and has gained additional experience in manufacturing since that time (Lee, 2019). Heavy manufacturing would require more investment than our priority sectors and North Korea may not be competitive in the area for decades, but we believe it will eventually be within North Korea’s reach and could help jump-start development and growth in the country, as it has elsewhere in Asia.

Mining and light manufacturing are prevalent in the existing SEZs summarized in Table 3.1, and electricity and transportation are crucial for effective SEZ operation, as they are for the entire economy. This overlap of sectors and SEZs will aid in the development of the layered investment framework in Chapter 6, which emphasizes focusing on currently existing facilities, sectors, and investing countries initially.

When considering priority sectors for development, the path of least resistance may be in those sectors that are already seeing progress toward private ownership. Currently, most private enterprise is being done by small, “necessity-driven” entrepreneurs who establish their own businesses, be that trading black-market goods, selling food grown on farms and handmade crafts, or providing services. There is also larger scale, “opportunity-driven” entrepreneurship that leverages private capital to either partner with—or lease resources from—state-owned enterprises. Across these types of private businesses, the services sector has seen the fastest movement toward privatization. This trend has spilled over from the services sector into other sectors, from agriculture to manufacturing, although the process has been slower the larger the scale of the industry; for example, mining has been one of the slowest (Kim and Yang, 2015). This is an important caveat to our trade-driven analysis, because trade data are much better at capturing economic activity in goods than in services, much of which in a developing country is nontraded (such as the services provided by restaurants and hairdressers). The next two sections will focus on reforms at the national level and remedy this limitation to some extent.
5. Lessons for North Korea’s Development from Other Countries

Over the last several decades of the twentieth century, several communist and socialist countries across the world embraced market-oriented reforms in a desire to grow more rapidly and increase the standards of living of their citizens; North Korea may be able to learn from their experiences. In this section, we first chronicle how the North Korea of today is similar to several other countries when they started market-oriented reforms. Our case studies include reforms in Vietnam (starting in 1986), China (starting in the mid-1970s), South Korea (starting in the 1960s), Poland (starting in the late 1980s), Russia (starting in the late 1980s), and India (starting in the early 1990s). These countries were chosen because they have been mentioned in the literature (as we will see below) as models for North Korea to follow or surfaced during our research as possible models. We then delve into the transition experiences of these countries, describing the reform process and the timing of those reforms. We focus specifically on Vietnam and China, two countries that were similar politically and culturally to present-day North Korea during the time of their transitions. The transition experiences of these other nations form one input for the recommended reforms for North Korea we provide in the next section.

Although many believed that market reforms would lead to political reforms and that democratic representation would follow from the free exchange of goods and services, and some transitioning countries did eventually become more democratic (e.g., South Korea, Poland), this has not been true in all countries (e.g., China, Vietnam). Another set of countries are ostensibly democratic but are actually governed by dictator-like strongmen or a small group of political elites (e.g., Russia, Belarus) that also wield great power over the economy. Although full economic openness is difficult to achieve without political openness, the last several decades have illustrated that some of the benefits of markets can be achieved under a variety of political structures. We focus mainly on the economic reforms pursued by our example countries and remain agnostic on the exact political systems in place in each of the countries.

The transition from a command economy to a market-oriented economy could be sudden (often referred to as a “shock therapy” or “big bang” reforms) or gradually phased in over time. In addition to the specific reforms, the speed of reforms should be a consideration for North Korea going forward. In shock therapy, substantial economic reforms are introduced quickly to “shock” the economy to a new equilibrium. Proponents argue that it is easier to pass reforms if they are done all at once before uncertainty and initial costs of adjustment cause support for reform to dwindle. It also affords little time for vested interests to block reforms or jockey for position in the new order. Like the proverbial “pulling the Band-aid off quickly,” shock therapy
allows the economy to quickly move through the transition period and immediately start rebuilding under the new system. The idea of shock therapy was prominent during the time of the dissolution of the USSR and several former soviet countries, such as Russia and Poland, went through a series of relatively quick economic (and political) reforms (Åslund, 2007; Klaus, 1993; Marangos, 2013; Melo, Denizer, and Gelb, 1996; Murphy, Shleifer, and Vishny, 1992; Murrell, 1992; Song, 2016).

In contrast, countries such as China and Vietnam have followed a gradual reform timeline where small reforms led to larger reforms over a period of several years or even decades. Proponents of gradual reform argue that it takes time to change institutions and laws and to adequately shift cultural norms, values, and incentives. They argue that changes will be better accepted if people can get used to them over time. Officials are also better able to experiment, to learn what works and what does not, and to pull back on unsuccessful initiatives. A long, well-thought-out process can help to reduce corruption and get input from many different stakeholders (Liew, 1995). However, a gradual approach drags out uncertainty over a longer period of time and may mean that some important reforms never happen or that future leaders have an easier time rolling back what has already been accomplished. Interdependence among reforms may also mean that many of them need to be done together and will not be successful if implemented in a piecemeal fashion. Further, a gradual approach may also keep the economy at a less efficient level of production for a longer period of time, thus decreasing the welfare of its citizens in the meantime (Wei, 1997).

The dichotomy between shock therapy and gradualism might be too stark. Although countries which adopted shock therapy were on the verge of macroeconomic crisis, those that adopted gradual reforms started with relative stability. In general, some reforms might need to be done slowly, whereas others quickly.

As Kim Il Sung once said in a speech about socialist ideology, it would be an error of dogmatism to “mechanically apply the experiences of others without due regard to our country’s history, our people’s tradition, our realities, and our people’s level of commitment” (Koh, 1978, pp. 632–633). Although the strategies of other countries cannot be adopted wholesale by North Korea without local adaptation and while important differences between our comparison countries in the past and North Korea today exist, we believe the country can learn from the successes of its peers as it seeks to create a more prosperous future for its citizens.

**Similarities and Differences to Other Countries**

To guide our interpretation of country experiences that might be the most relevant for North Korea, we created indexes of similarity between North Korea today and our comparison (or “case study” countries) around the start of their reforms. It might not make sense to “mechanically apply” the reforms from a country that is unlike North Korea in *all* aspects, and hence our attempt to understand similarities and differences. Figures 5.1 through 5.3 present our indicators
of cultural, demographic, and economic similarity between North Korea today and six other countries (South Korea, China, Vietnam, India, Poland, and Russia) at the time they began market-oriented reforms. The use of a few different areas to gauge similarity permits comparisons of reforms with a variety of countries that may be dissimilar in one aspect but quite alike in another. The reference year for India, Vietnam, Russia, and Poland is 1990. This was the year after the fall of the Soviet Union, when market reforms were taking place in Poland and Russia. It was also a year close to the pivotal economic reforms in Vietnam (1986) and India (early 1990s). The reference year for China is 1970, and it is 1960 for South Korea.

Each area of comparison is a composite of several subfactors, some based on published qualitative assessments by country experts and others based on available quantitative data. Detailed historical data on our case study countries as well as present-day data on North Korea were not always available and our measures combine several different quantitative and qualitative indicators into a single overall approximate measure of similarity.\(^1\)

**Cultural Factors**

We considered language, religious freedom, social organization, philosophy, history, and politics in determining the cultural similarities between North Korea and our case study countries. Culture can interact with and drive economic behavior through values, religion, concepts of justice and legal institutions, and attitudes toward redistribution and inequality. Political philosophy, history, and language shape the ways countries conduct business, with whom they trade, and with which foreign investors they choose to partner (Guiso, Sapienza, and Zingales, 2006, p. 26).

Cultural factors may be relevant for how quickly reforms are accepted by the population, as well as the mode in which they are introduced and sequenced. For example, a culture with a tradition of collectivism that places a high value on consensus and conformity may need to approach reform more slowly than an individualistic one with a higher tolerance for difference and change.

Figure 5.1 presents a spider graph of each country’s cultural similarity at the time of their respective reforms to North Korea today. Points closest to the origin denote less similarity, whereas points closest to the country labels indicate higher degrees of similarity. As indicated in the figure, North Korean culture today is most similar to that of South Korea at the time of its transition. This is followed closely by China and Vietnam. This result makes intuitive sense given the historical roots of the three countries and their geographic proximity in East Asia. India and Poland are culturally the most dissimilar to North Korea.

\(^1\) Additional details on the construction of our indicators of similarity can be found in Appendix A.
Demographic Factors

In comparing demographic factors between North Korea and our case study countries, we examined literacy rate, urbanization, age structure of the population, percent educated, and population density. Demographic factors can be a critical indicator of development potential. Factors such as age structure, percent of college graduates, and population density have significant effects on the number of available workers, expected retirement rates, and macroeconomic financial sustainability for a developing economy (Bloom, 2020).

Demographic factors may be relevant for which industries to target with market-oriented reforms, the relative importance of government transfer programs, development of cities, and education policy. For example, a country with an urbanized, relatively highly educated workforce might need to more aggressively work to remove capital constraints and ease regulations on high value-added industries such as advanced manufacturing and information technology, whereas a primarily agricultural society with low levels of education might concentrate on developing basic manufacturing and improving agricultural output and resource extraction.

Figure 5.2 shows that the former Soviet Union countries of Russia and Poland (during the onset of their respective economic development) are demographically most similar to modern North Korea. As discussed in more detail below, North Korea today is much more urban and older than its Asian neighbors were when they embarked on programs of economic development. However, our analysis indicates that none of the countries are very similar to North Korea demographically. North Korea’s demographics will be an important consideration in crafting development policy.
Economic Factors

We considered infrastructure (measured in kilowatt hours [KwH] of electricity per capita), foreign direct investment (FDI) (measured in net inflows in 2020 dollars), GDP per capita, and the sizes of the manufacturing, agricultural, and government sectors as a percent of GDP in constructing an index of similarity of economic factors between North Korea today and our case study countries at the time of their initial reforms.

The current level of economic development is a key determinant of future economic development. Adequate electricity, roads, and other infrastructure are necessary for producing, trading, transporting, retailing, and consuming goods. FDI is an important source of funding for creating new productive capital and also speeds and encourages the adoption of new methods and other innovations. Current GDP per capita and shares of GDP in different sectors are often predictive of future growth and indicative of what resources may be available for private enterprise.

Countries with low levels of these indicators can often grow quickly with basic reforms in what economists sometimes call “catch-up growth.” Countries with relatively higher levels of these indicators must pursue more complex strategies to encourage innovation and invention if they wish to continue growing. For example, a country with high government spending might cut unnecessary government departments and regulations to free up more resources for the private sector. Similarly, a country with low levels of electrification may invest (perhaps through a public-private partnership) in making sure that key population areas have access to cost-effective, reliable electricity. Conversely, countries with high levels of FDI may need to create incentives to direct resources to cutting-edge research to continue growing.
As Figure 5.3 illustrates, North Korea today is actually more similar to India in the 1990s than it was to China in the 1970s, or Vietnam in the mid-1980s for economic indicators. This justifies the inclusion of India as a comparison country despite its dissimilarity with North Korea on the cultural and demographic fronts. It is notable that South Korea in the 1960s is the second most similar country. The other countries tended to have lower electricity per capita, more agriculture as a percent of GDP, and lower GDP per capita than North Korea today. Meanwhile, Poland and Russia were much more developed than North Korea today. These differences likely have multiple causes, but one might be that North Korea received development assistance from the USSR during the Cold War. This put them ahead of Vietnam and China, which did not receive such assistance, but behind Russia and Poland which received much more. Even before the Cold War, however, European countries were much more developed than countries in East Asia.

Figure 5.3. Economic Similarity of North Korea Among Comparison Countries

Reforms in Other Countries

Given this assessment of similarities of our comparison countries to North Korea, we turn to describing the process of reform in the six case study countries listed above. We start with an examination of Vietnam and China, two countries born out of the same political ideology of the modern North Korean state, which, through reforms, have grown very quickly over the last 40 years. Both countries have followed gradual reform models. Given their political and cultural
similarities to North Korea and their success to date, we find these models compelling for North Korea to follow. Although politically very different, South Korea shares long cultural and historical roots with its northern neighbor. North Korea may be able to learn from South Korea’s efforts to manage change and the expectations of its people in the early days of reform. South Korea also scores relatively high in our economic similarity index. Demographically, North Korea is more similar to pre-reform Russia and Poland than it is to its neighbors in Asia. It may want to take lessons from these countries in industrial and labor policy. Finally, for many economic indicators, North Korea was more similar to India in the early 1990s than to any other of our case study countries. Reform era India may provide lessons about bureaucratic reform, encouraging FDI and trade, and opening to world financial markets.

*Rejuvenation in Vietnam*

Vietnam finished a long and protracted war that ended in 1975 and left it as one of the poorest countries in the world. In 1986, Vietnam adopted “Doi Moi” (rejuvenation), a series of economic and political reforms. The goal of the policies was to become a “socialist-oriented market economy.” Following these reforms, the country grew rapidly. Whereas its GDP per capita was barely $230 in 1985, it was more than ten times that in 2017 ($2,343); adjusted for purchasing power, it was over $6,000. Its 6–7 percent annual growth since 1990 was second only to China, helping to propel Vietnam from one of the poorest in the world to middle-income status in less than 30 years (Vanham, 2018). This growth was fairly widespread and helped improve the lives of millions of people; the percent of the population living in poverty dropped from 60 percent in the 1980s to less than 5 percent by 2019 (Baum, 2020). When the United States imposed tariffs on China starting in 2018, many manufacturers moved production facilities to Vietnam, signaling their belief in the country’s economic maturity.

*Similar but Not the Same*

As noted above, Vietnam of the 1980s was similar to North Korea today in many ways. However, there are also important differences between the two countries that must be taken into account when considering how Vietnam’s policies may or may not be adapted as a model for North Korean reforms.

Like pre-reform Vietnam, North Korea is a very poor country. North Korea’s GDP per person in 2015 was about 1 percent that of the United States, very similar to Vietnam’s GDP in 1985 (The Economist Staff, 2018). Other similarities between the two include a high-level, stated commitment to improving the economy, experimentation with reforms, challenges of shifting national security policy, and the role of “Southerners”—the southern provinces in Vietnam and South Korea in the case of North Korea—in the economy (Babson, 2019a).

In both Vietnam and North Korea, support for economic reform was publicly articulated by top leaders. In the case of Vietnam, after a period of intense internal debate among communist party leaders, the Sixth Party Congress announced initial reforms and the policy of *Doi Moi*
as official party policy in November 1986. Even before this official declaration, then Party Secretary-General Truong Chinh had recognized the problems of central planning saying:

> we have made mistakes due to ‘leftist infantilism,’ idealism, and to the contravention of the objective laws of socio-economic development. These mistakes were manifested in the . . . [emphasis given to] developing heavy industry on a large scale beyond our practical capacity . . . [maintaining] the bureaucratically centralized mechanism of economic management based on state subsidies with a huge superstructure which overburdens the infrastructure. As a result, we relied mostly on foreign aid for our subsistence. (Van Arkadie and Mallon, 2004, p. 65)

Although reforms in North Korea have not yet been extensive, Kim has similarly publicly stressed the importance of the economy and hinted at potential reforms. As mentioned in Chapter 2, beginning in 2013, he promoted his byungjin policy, which put economic growth on par with national security as a top policy objective (Sang-Hun, 2020). He again promoted his economic development agenda in his New Year’s speeches in 2018, 2019, and 2020, signaling his commitment to raising the living standards of his people (Corrado, 2020).

In North Korea, experimentation with private markets began following the famine in the 1990s. It was at this time that the regime tacitly allowed some market activities and private enterprise so that people could find ways to feed themselves, provide for their families, and bring hard currency into North Korea. The rise of the donju, the growing business class that prospered with protection from government officials, and the markets, Jangmadang, were discussed in Chapter 2. On collective farms, families are now given individual plots called pojeon and allowed to keep or sell what they produce above the state quota (Sang-Hun, 2020). This is reminiscent of the early days of reform in Vietnam. As Van Arkadie and Mallon, 2004, p. 71, argued,

> The reform process was inherently experimental and gradual. Reform, when it came, involved an incremental process, which can be interpreted as a learning process, with the leadership responding to successes and failures of policies in practice, and also as the outcome of an ongoing debate within the political system regarding economic strategy.

Vietnam was no stranger to conflicts either. Only a little more than a decade before it began Doi Moi it had been involved in open conflict with the United States and Vietnamese foreign policy was dominated by security issues. In the same sixth National Party Congress where Doi Moi was adopted, the government dropped all hostile references to China (given the suspicion Vietnam has had of Chinese domination due to centuries of conquest), and as reforms slowly progressed, Vietnam extricated itself from a bloody and brutal war in Cambodia to focus instead on its own development. The ending of hostilities in Cambodia paved the way for Vietnam to normalize ties with China (1991), become a member of the Association of Southeast Asian Nations (ASEAN) (1995), and establish full diplomatic relations with the United States (1995). According to one observer, “Politically, due to ASEAN’s high international prestige, ASEAN
membership would enhance Vietnam’s diplomatic standing and integrate Vietnam’s security with the security of the whole of Southeast Asia, thus creating an external environment favorable for economic development” (Thayer and Amer, 1999, p. 7).

Another similarity between the two countries is the important role of Southerners in the economy. Those in the south of Vietnam had had a stronger tradition of free enterprise and capitalism and they helped to lead the way when the country started to reform its economy. As noted by Van Arkadie and Mallon, 2004, p. 71,

For the southern provinces in particular the experiment with central planning was quite brief. From 1976, attempts were made to integrate the southern market economy into the planning system of the north, but central planning was only applied in the south with full vigour between 1977 and 1980. The private sector, although illegal, was never fully suppressed.

Despite these important similarities, there are also crucial differences between Vietnam in the 1980s and North Korea in the 2020s. North Korea is less transparent, has had a much longer period of isolation, is much more urban, and is much older than was pre-reform Vietnam (The Economist Staff, 2018). After being cut off from the international financial system for much of its existence, North Korea will also need to implement a much broader set of reforms. Given the low level of financial development that North Korea will be starting from, we considered a layered and sequenced approach in Chapter 6.

With Doi Moi, Vietnam signalled to the world that it was ready to reform its economy and work with outside institutions. Over the next decade, the country laid the groundwork to fully integrate into regional political and trade blocks such as ASEAN and improved relations with Western countries, especially the United States. Besides statements that it wants to prioritize its economy, North Korea has so far taken little concrete action to signal its desire to integrate into the world economic order. For instance, it seems reluctant to meet transparency requirements and obligations, which are required to join the International Monetary Fund (IMF), and by the international financial institutions (IFIs) in general. Perhaps the most important lesson of Vietnamese reforms for North Korea is the “willingness to learn from international experience” and work with the international community (Van Arkadie and Mallon, 2004, p. 76).

Another big difference between the two countries is the length of the period of economic isolation. Collectivization and centralized direction of the economy lasted for only two decades in Vietnam and, as mentioned, never really took hold in the south of the country. In contrast, North Korea has been living under a communist-oriented economy for seven decades. The vast majority of economically active individuals in North Korea today do not remember a time before juche, the national ideology of self-reliance, and many would need to start by learning the basics of how a market economy functions (The Economist Staff, 2018). Given decades of anticapitalist

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2 Development banks such as the World Bank, Asian Development Bank, and other similar institutions that fund, advise, and assist in development projects are collectively referred to as IFIs.
propaganda, some may resist any economic reforms toward capitalism seeing them as evil. However, the rise of the *Jangmadang* that now spans most areas of the country have likely helped many North Korean individuals to become familiar with concepts of private property, free exchange, demand and supply, and profit and loss. Whether the comfort with mainly informal markets can translate into acceptance and the ability to operate under a formal market economy with the accompanying capitalist institutions is an open question.

North Korea today is much more urban and much older than was Vietnam when it began its reforms. The median age in Vietnam at the time of its reform was around 20; it is 34 in North Korea today, which is higher than the median age in Vietnam even today. Young workers are more likely to adapt to new economic conditions. Lacking the dynamism and openness to new ideas of a large generation of young people, some fear that North Korea will “get old while it is still impoverished” (The Economist Staff, 2018). Also, a surplus of agricultural labor has often fueled development in countries across the world as workers move from low-productivity farming to higher productivity manufacturing jobs. Today, more than 60 percent of North Korea’s population already lives in cities compared with more than 70 percent of the workforce in Vietnam who were in agriculture when their reforms started. These factors may complicate technology adoption and productivity improvements, which are crucial to the growth process.

Differences aside, many leaders and policymakers, in both the United States and North Korea have touted Vietnam as a potential reform model. At a summit between North Korean leader Kim Jong Un and South Korean President Moon Jae-in in April 2018, Kim specifically mentioned the “Vietnamese model.” Later that year in July, U.S. Secretary of State Mike Pompeo echoed this sentiment by noting that the United States had once been at war with Vietnam but now traded billions of dollars of investment and goods with the country. Pompeo told Kim, “The miracle could now be your miracle” (Reed and Harris, 2018).

**Vietnamese Reforms**

Below we detail several of the areas where Vietnam made reforms over the last few decades that may be of use to North Korea today. For additional details on the timing and specifics of individual reforms, see Van Arkadie and Mallon (2004).

**Opened up to global trade:** Vietnam joined the ASEAN free trade area in 1995, signed a free trade agreement with the United States in 2000, and joined the WTO in 2007 (Babson, 2019a). It also made further agreements with China, India, Japan, and Korea, and also joined the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and Regional Comprehensive Economic Partnership. It is signatory to 16 bilateral and multilateral free trade agreements, and with Singapore, it shares the top spot in East Asia for number of such agreements.

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3 Similar to the development path of countries around the world, Vietnam’s agriculture share of GDP fell from more than 40 percent in the late 1980s to less than 15 percent of GDP by 2019.

4 See also Vanham, 2018.
(Eckardt, Mishra, and Dinh, 2018). Its openness to trade is reflected in the sum of its exports and imports totaling to 200 percent of GDP.

**Opened up to foreign investment:** The first FDI law was passed in 1986 and it has since been amended many times to be more investor friendly. FDI accounts for close to 90 percent of manufacturing exports (Eckardt, Mishra, and Dinh, 2018).

**Internal regulatory reforms:** Vietnam adapted a “reform with growth” process, with increases in standards of living helping to offset the disruptions and adjustments of the necessary changes. Organizational competence in policymaking and implementation was also critical. The government first allowed agricultural and state-owned enterprises to operate on a commercial basis. Following the allowance of private firms, more than 30,000 businesses were created in the first 10 years of reform (Unknown, 2005). Enterprises fully owned by the state fell from more than 12,000 in 1989 to fewer than 600 in 2016 (Baum, 2020). Regulatory reforms helped the country to move up in the World Economic Forum’s Global Competitiveness Report rankings and the World Bank’s Ease of Doing Business rankings (Eckardt, Mishra, and Dinh, 2018). Vietnam has made continual progress on enforcing contracts, increasing access to credit and electricity, paying taxes, and trading across borders. Institution building reforms were also critical in Vietnam. These included reforming the legal and financial system, improving the collection of statistics necessary for policy analyses and the measurement of poverty, and better management of the macro economy and the State Bank of Vietnam (Babson, 2019a).

Babson (2019a) notes that North Korea should learn from Vietnam in prioritizing reforms that increase productivity and economic growth. He further suggests that North Korea should shift from an adaptive, reactive approach to dealing with the increase in market activity to a managed process, facilitated by help from the international community for official development assistance, FDI, and technical assistance (Babson, 2019a). Greater formalization may also lead to greater tax revenue for the government, increasing state capacity.

**Investment in education and infrastructure:** Vietnam made large public investments in primary education and infrastructure. In the 2015 OECD Programme for International Student Assessment, it scored eighth out of 72 countries. It has made massive investments in infrastructure to ensure cheap mass access to the internet, increase power generation, transmission, and distribution capacity, and connect the country to seaports and marine terminals (Eckardt, Mishra, and Dinh, 2018).

**The role of IFIs:** The international community was very important in promoting Vietnamese reforms and offering technical assistance to the country. As Babson, 2019a, noted,

> From 1988–1993, the IMF and World Bank provided training and policy advice before commencing lending operations. Although sanctions were still in place, tacit US support for an IFIs role helped build confidence in relationships and a foundation for an expanded role. The IFIs played a major role in policy dialogue and donor coordination that helped build confidence in the transition process domestically and internationally and form a shared agenda among development partners. Working-level relationships in project design and implementation with
counterparts in many government agencies as well as coordination of activities with other donors, private investors and NGOs were also important once lending commenced.

We discuss the reforms needed in North Korea for it to benefit from the IFIs in a similar way in Chapter 6.

Learning from the successes and failures of the Vietnamese reforms while adjusting for the differences between North Korea today and Vietnam in the 1980s could help catalyze positive economic change in North Korea and help it to become the next growth miracle.

The Opening of China

China has long been considered a model of economic development for North Korea. After a turbulent first three decades under Chinese leader Chairman Mao Zedong, including an economic policy called the Great Leap Forward which led to a famine that reportedly killed up to 45 million people between 1958 and 1962 and a Cultural Revolution from 1966 to 1976 which caused political and economic chaos, China began to open up its economy following the death of Mao in 1976 (Morrison, 2019). Deng Xiaoping led the Chinese government after Mao’s death and the Central Committee of the Communist Party adopted his economic reforms in December 1978, with implementation beginning in 1979. Over the past 40 years, China has been among the fastest growing economies in the world. From 1979 to 2018, China’s real annual GDP growth averaged 9.5 percent, causing the World Bank to note that it enjoyed “the fastest sustained expansion by a major economy in history” (Morrison, 2019, p. 1). This allowed China to double its GDP every eight years and to raise about 800 million people out of poverty. It has become “the world’s largest economy (on a purchasing power parity basis), manufacturer, merchandise trader, and holder of foreign exchange reserves” (Morrison, 2019, p. ii). The IMF announced on October 7, 2014, that China had overtaken the United States as the world’s largest economy (on a PPP basis, and second on the basis of market exchange rates); the first time the United States had not claimed the top spot since it took the position from Great Britain in 1873 (Li, 2015, pp. 128–138). Focusing on relative rather than absolute income changes within the country, some worry that with the amazing economic growth also came widening inequality (Kennedy, 2010).

China Then, North Korea Now

The modern states of China and North Korea started life within a month of each other. The People’s Republic of China was established on October 1, 1949, after a revolutionary struggle spanning more than two decades. The Democratic People’s Republic of Korea (DPRK) was established on September 9, 1949, in the wake of Japanese rule during World War II and the military occupation by the Soviets that followed the Allied Victory (Koh, 1978).

In addition, the two countries have had “a long history of cultural, economic, and political interactions between them; a similar level of economic development at the time of the political takeover” and strong and continuing cultural, economic, military, and political ties after 1949
(Koh, 1978, p. 643). The North Korean leader at the time, Kim Il Sung, personally had a strong Chinese background and much of the language, expression, and interpretation of ideology was similar throughout the first several decades of the two countries’ existences.

Persistent food shortages have plagued both pre-reform China and present-day North Korea leading to famine and widespread starvation. In both countries, these extreme deprivations helped to spur experimentation with market reforms. During much of its pre-1978 history and especially during the 1960s, the food supply in China was unable to keep up with its growing population and the nation faced persistent famine that necessitated massive imports of grain. Similarly, North Korea has faced chronic grain shortages since the 1970s, a widespread famine and mass starvation in the 1990s and, by some reports, is continuing to struggle with food shortages today.\(^5\)

Despite these similarities, the two countries had diverged substantially by the early part of the twenty-first century. Along with its much larger size and population, China’s forty years of economic growth contrasted sharply with the stagnation of North Korea. However, in some important ways, even pre-reform China was very different than the North Korea of today. Paralleling our comparisons with Vietnam, North Korea today is more isolated, more urban, and has a much older population than China when it started to reform its economy. North Korea has not been majority rural since 1968 and by 2019 only 38.3 percent of its population lived in rural areas (Stangarone, 2019).\(^6\) North Korea is also more industrialized than pre-reform China, and industrial policy rather than agricultural reforms may lead to quicker growth. Finally, China’s vast rural interior and large population called for tight central control along with a more federalist approach in the provinces. North Korea’s central political control would be undermined by provincial economic autonomy—as happened during the decentralized marketization in urban areas in response to the famine—and the potential for destabilization in the wake of broad market reforms could deter North Korean leadership (Izatt, 2010). Izatt, 2010, p.182, argues that “differences in geography, demographics, climate, history, and content and role of ideology have meant that the Chinese successes could not be realized swiftly, if at all, in North Korea.”

The nature of trade has also changed since China began its reforms. In 1980, service exports were 17 percent of global exports; in 2016, they were 24 percent of global exports and accounted for 40 percent of value added. Low-cost manufacturing and a reliance on exports may provide fewer prospects for rapid growth for North Korea than it did for China (or Vietnam) (Stangarone, 2019). It is also not clear that Kim favors such an approach having remarked that he does not want North Korea to become “implanted with the imperialists’ outsourcing economy” (Stangarone, 2019).

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\(^5\) According to Izatt, 2010, p. 180, “The North Korean leadership had no choice but to conclude that the system was failing when the nation underwent an estimated eight years of famine during which between 3 and 5 percent of the entire population starved to death.”

\(^6\) Izatt (2010) puts this figure at 30 percent instead of 38 percent.
Black Cat, White Cat

Signaling an openness to economic reform and experimentation with capitalism, Deng Xiaoping famously said, “Black cat, white cat, what does it matter what color the cat is as long as it catches mice?” (Morrison, 2019, p. 4). Beginning in 1979, Deng led several major reforms in China which allowed for large-scale capital investment and increases in productivity (Chaudhury, 2018; The Economist Staff, 2020; Izatt, 2010; Kennedy, 2010; Li, 2015; Phillips, 2015; Yung-nien, 2010). Specific reforms included the following:

**Introduction of prices and aligning incentives:** Price and ownership incentives were introduced for farmers, allowing for the sale of some crops on the free market. These reforms allowed China to produce food for 95 percent of its population by 2015. Increases in agricultural productivity allowed surplus labor to move to cities and helped to spur manufacturing growth. The percent of the Chinese population that was rural declined from 82.1 percent in 1978 to about 42 percent by 2019 (Stangarone, 2019). Price controls on other products were also gradually eliminated (Morrison, 2019).

**Special economic zones:** The establishment of four SEZs along the coast for the purpose of attracting foreign investment and technology.

**Opening up to and decentralizing global trade:** Removing trade barriers increased competition and FDI inflows. By the 1990s, investment reforms and incentives had led to substantial increases in FDI which allowed for productivity growth and increases in exports. Foreign-invested enterprises accounted for only 2.3 percent of China’s industrial output in 1990, but rose to 35.9 percent in 2003 before falling to 25.9 percent in 2011. Foreign invested companies played an even larger role in Chinese trade, accounting for 58.3 percent of Chinese exports in 2005 and 59.7 percent of imports. Although still substantial, these levels had fallen to 41.7 percent for exports and 43.7 percent for imports by 2018 (Morrison, 2019).

**Decentralizing economic control:** Provincial and local governments were allowed greater economic control and the ability to compete on free market principles. Regions could then experiment with tax and trade incentives to attract foreign investment.

**Encouragement of entrepreneurs and new businesses starts:** Individuals were encouraged to start their own businesses and those that were successful were praised by the media and local politicians instead of being stigmatized. Anticapitalist rhetoric was slowly phased out.

**Efforts to guarantee the rule of law:** Communist officials made efforts to root out corruption within the party and to set up a more independent and rules-based legal system for business transactions. The party also told the people that it would guarantee social and political order (Yung-nien, 2010).

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7 Some have dubbed China’s mix of market reforms and strong state intervention in the economy as the “Chinese Model” or the “Beijing Consensus.”
As Vietnam would later do, China implemented reforms first in limited geographies, allowing it to see which policies produced economic growth. Successful policies could then be replicated in other parts of the country while unsuccessful efforts could be discontinued. Deng reportedly called this process “crossing the river by touching the stones” (Morrison, 2019, p. 5). This gradualist and sequenced approach would also likely be very important for North Korea because the country’s elite feared the political destabilization that economic reform and liberalization could bring. According to Izatt, 2010, p. 178, “Successful reformation is thus contingent upon the ability to maintain central control while simultaneously marketizing.”

Chinese officials today refer to China as a “socialist-market economy” or speak of “socialism with Chinese characteristics,” signaling that although markets are used in a number of areas to spur and sustain economic growth, the government is still very involved in the economy and has the ultimate say on China’s future path of development (Kennedy, 2010; Morrison, 2019).

**South Korea’s Economic Development**

South Korea was devastated after the Korean War with no assets left except for its people. It had no natural resources or sufficient tradeable goods to sustain a market economy. South Korea’s per capita income was less than $100 post-Korean war—poorer than any country in the region and most of the world at the time and dependent on U.S. aid. Many in the United States doubted its economic viability and thought of the country as a “nightmare,” an “albatross, a bottomless pit,” and a “rat-hole” to foreign aid agencies (Izatt, 2010; Woo and Woo-Cumings, 1991, p. 46). However, South Korea grew quickly in the postwar period. By the 1990s, it was known as one of the four “Asian Tigers,” together with Taiwan, Singapore, and Hong Kong, industrializing rapidly and growing at rates of more than 7 percent per year. In 1996, South Korea became an official member of the OECD, cementing its place as a developed country (The Economist Staff, 2019; OECD, 2010). Its GDP per capita is about 20 times that of its northern neighbor.

Unlike Vietnam, South Korea does not share a country or political system with its northern neighbor and its direct effect on North Korea is less than the effect of southern Vietnamese in the development process of Vietnam. Still, North Korea has benefited directly and indirectly from the economic prosperity of its southern neighbor and, as it continues to develop, could further benefit from the knowledge of markets, finance, industry, innovation, and trade that South Korea possesses. Although direct aid has been relatively low over the last decade, South Korea sent hundreds of millions of dollars in aid and food loans to North Korea from the early 2000s through 2008 (Reality Check Team, 2019). In May 2019, South Korea committed to providing $8 million in humanitarian aid to help the North, which faced a food crisis caused by its worst harvest in a decade (Sang-Hun, 2019). Technical expertise, financial aid, and investment from South Korea are likely to be critical for any plan of long-term sustainable development in North Korea.
Same People, Different Paths

Although the North and South Korean peoples share a common history and culture, their political systems, openness to the outside world, and political alliances diverged rapidly following the Korean War. For a time, the governments of both countries maintained tight control of their respective economies. But, although North Korea was oriented toward the Soviet Union and espoused communist ideology, South Korea oriented toward the West and used industrial policy to maximize exports. Under South Korea’s dictatorial leadership of President Park Jung Hee in the 1960s and 1970s, the government implemented heavy interventionist policies to promote exports while imposing heavy tariffs on imported goods to discourage competition and protect domestic producers. These policies led to the birth of South Korean Chaebols, or industrial conglomerates such as Samsung, Hyundai, LG, and Hanjin (Lee, 2002). This aggressive development model came under fire both internationally and domestically for its repressive leadership that governed with an “iron hand” and critics claimed that the government used unethical policies, sacrificing culture and values for economic success (Toussaint, 2006, p. 4211). The Heavy and Chemical Industry push in the 1970s was particularly controversial and criticized as irrational industrial targeting and creating great economic inefficiencies (Horikane, 2005).

South Korea’s industrialization occurred under the heavy government intervention of President Park’s administration. In 1961, President Park established the Economic Planning Board and released a series of five-year economic development plans to develop South Korea’s economy. President Park’s administration masterminded every major industrial project during his time in office and designated priority industries such as steel and petrochemicals as the government’s major investments. In the 1960s, more than one-third of the government’s expenditures was spent on investment, with public investments accounting for roughly a third of all fixed capital formation. Public enterprises enjoyed annual growth rates of 10 percent from 1963 to 1977. Although South Korea did not identify as a socialist state, its output share of public enterprises for its GDP outranked those of the more socialistically identified India and Pakistan at the time. In addition, the government became a guarantor of credit for foreign lenders, allowing it to control which firms received such credit. This also allowed for the government to easily control inflow and outflow of capital (Graham, 2003).

President Park’s administration heavily intervened in regulating markets. To only allow for the flow of resources to the industries and companies that the government deemed fit, Park’s administration utilized methods of credit control, import control, foreign exchange control, tax incentives, and industrial licensing. During the 1970s, the government taxed roughly 20 percent of the profits of prioritized industries and all others at 50 percent. Furthermore, preferred industries received preferential loans with interests roughly 5–12 percent lower than loans offered to nonpreferred industries (Chaudhuri, 1996). In addition, foreign capital was mostly welcomed only if it contributed to the development of the priority sectors as deemed by the South Korean government. South Korea heavily regulated FDI for the domestic market while
encouraging FDI for its export market. In fact, FDI focused on domestic production is a relatively recent phenomenon in South Korea (Kim, 1991, p. 37). As exemplified by these types of economic policies, South Korea’s development model focused mostly on aggressive expansion rather than stability under Park’s administration.

In the early years of Park’s tenure, both skilled and unskilled South Koreans were encouraged to find employment overseas in countries such as Germany and the United States. As in the North today, this policy stemmed from a lack of job opportunities in the domestic market as well as an effort to generate foreign currency in the form of remittances. Many of South Korea’s educated populace found themselves in labor-intensive, oftentimes dangerous blue-collar jobs overseas, particularly in labor jobs where host nations had difficulty finding workers among its own people (Toussaint, 2006, p. 4211).

Potential Points of Intersection

Despite the different paths the two Koreas took, South Korea’s authoritarian economic growth model appealed to Kim Jong Il. Izatt (2010) argued that although North Korea could learn from the Chinese, the South Korea “developmental dictatorship” under Park is the more applicable model for North Korean development. She notes that China’s success was based on decentralizing agriculture, in which a huge segment of the population participated, promoting entrepreneurship among its large population, and accepting greater inequality and its social consequences—all of which may be more problematic for North Korea given its different demographics and political system. Instead, she argues “historical, geographical, demographic, ideological, and general political economic similarities” make South Korea’s experience a better model for North Korea (Izatt, 2010, p. 176). Furthermore, North Korea’s industrial sectors are similar to those initially pursued by South Korea under Park. Izatt, 2010, p. 188, noted that “as North Korea lacks a dynamic agricultural sector and a vast pool of labor common to developing countries, its comparative advantage in reprocessing, high-tech, and more sophisticated heavy industrial products” is more similar to South Korea’s, which also initially relied on labor-intensive reprocessing. North Korea is endowed with natural resources, something South Korea did not have at the start of its economic development, which it could potentially use to aid and complement a strategy of industrial processing. Given these observations, it would be useful to examine the developments in South Korea that have relevance for the North.

The Donju class—the chaebols of the North: It is a known fact that many of North Korea’s “state-owned” enterprises are privately owned and funded by the “wielders of the wealth,” the above-mentioned donju class. Although owners are legally required to state that their businesses are state-owned enterprises, they are in practice privately owned with the state benefiting only from their taxes. Although in the past, North Korea heavily cracked down on any semblance of

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8 Singapore and Lee Kuan Yew (1959–1990) would be another example of a successful developmental dictatorship model.
market activity, its market practices greatly reformed after the Arduous March of the 1990s through the normalization of Jangmadang. In some ways, the relationship between the donju and the Kim family are like that of the chaebols and President Park—in exchange for enjoying legal economic protection, and prioritization of its industries, the state receives tax revenues and political power that is stabilized by the economic backbone of the country. As an economic expert of North Korea, Andrei Lankov, 2017, once described: “For North Korean bureaucrats and state company managers, the unofficial private sector acts as a proverbial goose laying golden eggs.”

**Economic growth under a dictatorship:** Preservation of political control under the Korean Workers Party, and specifically under the Kim family, would likely have to coexist with any market-oriented reforms. A critical dilemma for leaders of dictatorial states is the potential danger that opening the economy could have on political power and stability. President Park of South Korea was able to preserve his dictatorial powers by prioritizing the growth of the chaebol industries. The Kim family could do something similar by prioritizing the enterprises of the donju, expanding their holdings, and working with them to create industrial conglomerates that will simultaneously provide both economic growth and political protection (Izatt, 2010). For example, natural mineral production and refining could be accelerated with a donju-government partnership. However, although North Korea enjoys a relatively stable relationship with China, it is unclear if China could or would be willing to absorb North Korean exports to the same degree that the West did from South Korea (Izatt, 2010).

**Rural Development Movement—Saemaul Undong:** The saemaul undong translates to “new village movement” and was a community-based movement purposed to develop rural areas in South Korea in the 1970s. The movement largely started as a way for the Park administration to appease the rural populace, who grew discontented over the gaps in standards of living between rural and urban cities during the rapid growth of South Korea’s economy (Park, 2012). Although saemaul undong started as a way to address differences in living standards between rural and urban citizens, it later encompassed a larger movement to improve overall standards of living for all South Koreans. Although the movement helped to assuage absolute poverty in underdeveloped areas, it was insufficient in addressing systemic issues of agriculture at the time. Given North Korea’s underdeveloped areas, a policy to address inequality will likely be an important component of reform if the country starts developing rapidly, especially given the above-mentioned concentration of economic power among the donju.

**Usage of migrant workers for remittances:** Under President Park, South Korea’s migrant workers were required to remit up to 80 percent of their earnings to the banks of the companies that sponsored them to work overseas (Stahl and Arnold, 1986). This aided the country in securing much needed foreign currency during the fluctuation of the South Korean won and also

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9 However, such a strategy would likely reinforce existing inequality. The saemaul undong movement discussed below could ameliorate some of this concern.
in helping families that could not find jobs domestically. North Korea is already very familiar with the remittance culture, and this will be useful for the economy when securing hard foreign currency while its own won stabilizes in the meantime. In 2019, experts estimated that North Korean migrant workers earned approximately 200 million USD from 2015 to 2017 (Koen and Beom, 2020, p. 47). North Korea currently relies on remittances from its migrant workers to account for its trade deficit (among other uses) and this will likely still be needed, at least in the early phases of North Korea’s economic development (Nanto and Chanlett-Avery, 2010).

Poland’s Economic Development

The term “economic miracle” is often used to describe the rapid growth of East Asian countries in the 1990s, yet what happened in Poland with the fall of communism was no less miraculous. It was one of the few countries to escape the “middle-income trap,” transitioning to a high-income country within 15 years of beginning market liberalization policies, a record time (Myck et al., 2017).

Other Side of the World, Yet Similar

Despite being on the other side of the world with a very different history and culture, in many ways North Korea today is similar to pre-reform Poland. Like North Korea today, Poland was under communist rule, with significant state involvement in the economy. Poland’s GDP per capita in 1990, the year after the fall of communism there, was roughly $1,700, in 2020 dollars (World Bank, 2020a). North Korean GDP per capita was estimated to be $1,700 in 2015, in nominal terms (Central Intelligence Agency, 2020). Poland is situated adjacent to the European Union (EU), one of the world’s largest markets for goods and services. Similarly, North Korea sits between South Korea, Russia, China, and Japan—the latter two being two of the largest three economies in the world. Current estimates of private sector activities in North Korea, that 40 percent of citizens participate, match estimates for Poland immediately after the fall of communism (Harris, 2017).

The Polish Miracle

In a report on Poland’s economic development, the World Bank created a five-point framework that it claimed drove Polish economic success: governing, sustaining, connecting, growing, and including. North Korea can draw on these lessons to create its own economic growth miracle.

**Governing:** Establishing strong governing institutions was key to Poland’s success. Governing institutions are economic and political. Policies were adopted to move toward a market economy in tandem with democratic reforms. By having the dual tracks of economic and political reform, Poland was able to create a political consensus around the economic policy changes, increasing buy-in and forestalling blowback during the difficult transition. Political reforms went beyond democratic representation, namely overhauling the public sector to make it
less corrupt, more efficient, and more in tune with the needs of citizens. The order of these reforms was crucial: first there were economic liberalizations, followed by political reforms to create a shared national vision, before the deeper and more difficult second round of economic reforms. The democratization of politics made it harder for vested interests in the status quo to block further reforms that jeopardized their business models. A final component of success was anchoring the national psyche on achieving a shared goal: gaining EU membership (Myck et al., 2017).

**Sustaining:** To sustain healthy growth, Poland took numerous steps to maintain macroeconomic stability. This included creating fiscal policies that limited deficits and debt, a flexible exchange rate, inflation-targeting monetary policy, and strong regulations of the banking and financial sectors. Sustained, stable growth was possible because of these macroeconomic policies, such as fiscal discipline so that there was room in the budget for countercyclical spending if necessary. The government also encouraged citizens to save, boosting the savings rate. Further, government policy encouraged the development of local capital markets (Myck et al., 2017).

**Connecting:** Poland moved quickly to integrate itself into the global economy. It cut tariffs and invested in infrastructure. Poland worked to integrate itself into “global value chains,” linking its markets to global ones. By attracting FDI, Poland brought capital goods and technology transfers to local firms. Poland sought to move up the global value chain and not simply do basic manufacturing. This required promoting innovation and entrepreneurship, and reorienting the economy to provide quality products rather than competing on quantity. This integration with the global economy, especially with access to nearby EU markets, was a key driver in Poland’s rapid growth (Myck et al., 2017).

**Growing:** To drive growth, Poland used markets to reallocate resources as efficiently as possible within the economy. Through its market liberalization, it allowed resources to move between sectors and within sectors, wherever they could be used most effectively. Poland also invested heavily in human capital, significantly boosting education spending. Policies were not just aimed at youth education, but skilling of older workers, especially those who lost their jobs. Government policy also promoted the adoptions of new technologies, especially the internet, and the creation of home-grown technologies from increasing research and development funding (Myck et al., 2017).

**Including:** To maintain support for the reforms Poland implemented, policies were created to make sure the majority of citizens were included in the benefits of Poland’s growth. This meant creating a social safety net to provide for people transitioning careers or unable to work for other reasons and increasing the minimum wage. Investments in education ensured that the next generation was included in the process of development, and progressive taxes funded social programs and health care for the poor.
Russia’s Economic Development

Russia shares many of the same similarities and differences with North Korea as does Poland. And Russia’s economic development approach was broadly similar to Poland’s model, although with a less optimistic outlook for future growth. Consequently, we focus specifically on the uneven economic development in Russia after the fall of the USSR (which can provide lessons for North Korea on potential pitfalls) rather than reiterate points previously presented.

After the failed perestroika and glasnost policies under Mikhail Gorbachev’s Soviet Union, Boris Yeltsin succeeded him as the first elected president of Russia. Yeltsin attempted to privatize formerly state-owned enterprises and followed the shock therapy approach to economic reform in vogue at the time; he quickly assembled a team of policymakers to instill radical change in Russia’s failed soviet-style system.

However, most of Russia’s economic development aimed at short-term fixes to systemic problems that failed to work in concert with Russian political organs and did not fundamentally restructure the underlying economic and social system. One of these policies included an immediate stabilization of inflation. When the IMF entered Russia in 1993, its chief priority was to control the inflation of the ruble. It preferred a strong monetary policy that would keep the central bank’s discount rate at 25 percent and strong exchange rates. It allowed foreign investors to buy short-term government bills to stabilize the ruble. In addition, in an effort to rapidly privatize formerly state-owned enterprises, Yeltsin’s administration distributed approximately 150 million vouchers to the Russian populace so ordinary citizens could purchase shares in privatized firms—however, unchecked corruption failed to create transparency and equity during the privatization process, with rich and politically connected individuals ending up with the lion’s share of the privatized industries. This led to unregulated ownerships of private property with ordinary Russians receiving little for their investments and empowered Russian oligarchs, who were able to gain control of the most valuable assets in the economy at deep discount rates (Desai, 2005). The government did not build state capacity and inequality, pessimism, and distrust of the new system increased dramatically. The lofty shock-therapy goals to privatize 70 percent of the formerly state-owned light industries as well as 60 percent in food retail trade by 1992 failed to properly reform Russia’s systemic economic problems (Murrell, 1993). Subsequently, these types of policies were inadequate to address sudden changes in industry behavior, creating an interenterprise debt crisis (Murrell, 1993).

Russia’s postcommunist reform is often referred to as a patrimonial system and bears little resemblance to a true free market. Patron-client ownership networks persisted in the economic structure, whereas parasitic financial-industrial groups dominated the markets (King and Szelényi, 2005). Furthermore, informal sectors as well as inadequate public goods plagued the state-economy interaction, creating personalistic enforcement of laws that allowed patrons to benefit clients (King and Szelényi, 2005). These inefficient policies gave room for a few Russian investors to take advantage of the gaps in the reformed economic system and the rampant cronyism
that existed within the government gave rise to Russian kleptocracy and crony capitalism (Atlantic Council Eurasia Center, 2019).

A Cautionary Tale: The Power of the Oligarchs

Russia’s economic reform is a cautionary tale of corruption that led to a patron-client economic system, allowing for a few individuals to take advantage of crony capitalism at the expense of widespread economic growth. Although many developing capitalist countries often experience a market transition where the powerful few dominate key industries and markets (e.g., the chaebol in South Korea), Russia’s economic development model is one where the powers of the money-wielding oligarchs and government corruption went unchecked.

One of Yeltsin’s most controversial reform initiatives was the “Loans for Shares” program where positions in 12 different formerly state-run companies were sold to private investors in return for a promised loan payback. These companies were sought after by private entrepreneurs (oligarchs) and Soviet-era industrial managers. The state’s largest oil, steel, and nickel companies were included in the list of companies sold to these investors (Treisman, 2010b). However, the execution of the companies’ auction was often plagued by blatant cronyism, with companies bequeathed to political allies and friends at far below fair market value. More importantly, the program only eased, but did not stop, the seeping of influence from these entrepreneurs into elections and government. In one of the many examples of Russian oligarchical influence in politics, the semibankirschina, seven major financial industrial groups colluded to secure enough campaign funding and support for Yeltsin’s reelection in 1996, in return for favors from the government (Braguinsky et al., 2000). Furthermore, the “biggest winners from loans for shares—as from most controversial policies in the 1990s—were not the upstart entrepreneurs but the aristocrats of the old Soviet order, who had occupied the command heights of industry as the ancien régime collapsed” (Treisman, 2010a, p. 224).

Given the prevalence of North Korea’s informal markets, corruption, and the select few who already enjoy exclusive economic rights and its associated power, the likelihood of the powerful few capturing the market must be carefully guarded against in any economic reform (Gorodnichenko and Grygorenko, 2008).11

10 The scheme was intended to aid Yeltsin’s reelection bid by acquiring funds from investors who stood to benefit from the scheme.
11 Note that the South Korean chaebols may have helped push forward economic development in the country while the businesses run by the oligarchs have likely impeded development in Russia. Further study of this is merited. It may be because of additional checks on the power of corporations (and their owners) in South Korea as the country democratized that did not exist in Russia. Entrepreneurs having to build businesses from scratch in South Korea versus insiders taking over previously state-run businesses in Russia may have also led to differences in how the corporations interacted with and benefited the broader society.
Reforms in India

After gaining independence from the British in 1947, India implemented its own form of socialism for more than three decades. Limited reforms began in the 1980s in response to deteriorating economic conditions. In 1991, a fiscal and balance of payments crisis rocked the economy and provided the impetus for a series of significant economic reforms championed by then Finance Minister, and later Prime Minister, Manmohan Singh. India grew quickly in the years after the reforms. Between 1991 and 2016, Indian GDP (PPP) went from $1.096 trillion to $7.735 trillion and GDP per capita went from $1,230 to $5,840 (PPP) (World Bank, 2019a, 2019b). Between 2005 and 2008, the economy grew at 9 percent annually and for many of the post-reform years India was the second fastest growing economy, after China. In 2015–2016, India was the fastest growing economy in the world with a 7.6-percent growth rate and it was expected to be the second largest economy in the world by 2050 (Rao and Kadam, 2016).

Asia Is Big and Diverse: Similarities and Differences with North Korea

India is much larger, more populous, and more diverse than North Korea with a very different history and culture. In addition, India has been democratic since independence and India’s brand of socialism differed from that in Poland, Russia, and the Far East. However, pre-reform India was similar to North Korea today for state control of the economy, restrictions on trade, lack of outside investment, percent of GDP from agriculture, difficulty of starting private businesses, and capital controls, ranking highest in our economic similarity index discussed above. India’s reform was gradual through the 1980s until a crisis required rapid change, even if not a full-blown shock therapy. Despite cultural and structural differences, India’s development path and specific reforms can inform North Korea as it seeks to grow its economy and provide a higher standard of living for its people.

Removing the Shackles: Liberalization in India

The government of Rajiv Gandhi began limited reforms in the period from 1984 to 1991 by liberalizing capital goods’ imports and starting industrial delicensing. Reforms were consolidated after 1991 when much of the industrial licensing infrastructure was dismantled and many tariff and nontariff trade barriers were removed (Lahiri, 2020). The reforms reduced taxes, reduced import tariffs, opened the country to foreign investment, and deregulated many markets. Government intervention in the economy was scaled back and what was known as the “license-permit raj,” the idea that the government needed to provide licenses or permits for all significant economic activity, was drastically curtailed. Prior to the reforms, permits and forms had to be submitted to and approved by almost 80 separate government agencies in order for a company to begin production. Once production began, it would be regulated by the government (Times Now Bureau, 2016). This benefited those with connections to the government who could navigate the permit process and stifled competition, allowing monopolization of many industries. After the reforms, nonbank financial institutions and private sector banks were able to enter the market.
and provide credit to individuals and businesses for the first time since the banks were nationalized under Prime Minister Indira Gandhi in 1969 (Times Now Bureau, 2016).

Specific Indian reforms included (Srinivasan, 2003) the following:

**Import licensing was abolished**: Between 1991 and 1992 and 1996 and 1997, tariff rates declined from a weighted average of 72.5 to 24.6 percent.

**Capital account liberalization**: The exchange rate was unified, and a system of managed float was introduced in India in 1992–1993. In 1994, the rupee was made convertible for current account transactions. Short-term debt was reduced from 1.9 percent of GDP in 1991 to 0.6 percent in 2002.

**Foreign direct investment**: Restrictions on foreign capital were loosened starting in 1991. Continually expanded over the following decades, these initially included relaxed requirements on investments in high priority industries.


**Divestment and privatization**: A Disinvestment Commission was set up in 1991–1992 to identify public sector units for equity disinvestment and to figure out the best way to carry out the sale. However, progress on divestment and privatization was slow and contentious.

**Privatization and investment in infrastructure**: Efforts were made to privatize and improve the efficiency of infrastructure such as electricity, transportation (roads, ports, railways and airports), and telecommunications.

**Financial market reform**: Reforms in the financial sector sought to deregulate the environment and create a level playing field for private institutions while simultaneously strengthening supervision of the system as a whole. The goal was efficient and stable financial institutions and markets.

It is apparent from the experiences of the comparison countries that there is no single path to economic reform and growth. The countries we have examined differ in the speed with which they enacted reform, the extent to which they relied on trade and foreign investment, and the amount of centralized control they exerted. The reform experiences of this diverse set of countries, and an understanding of the way in which these countries are similar to and different from North Korea, in conjunction with lessons from existing investment frameworks in the next section, will allow us to develop a reform roadmap in Chapter 7.
Given how poor North Korea is, it is unlikely that the country could develop with only local capital and without foreign investment. Reforms needed to attract such investment have been well understood in the literature and we draw on them while tailoring them specifically to North Korea based on our analysis of the country’s economy. The examination of comparison countries in the previous section will also allow us to anchor the framework developed in this section to the North Korean context and develop relevant recommendations in the next section. Myriad current factors dissuade investors from making any major financial decisions in the country. The lack of systems such as a credible judiciary, clear investment laws, rules for settlement, wages, and remittance policies make North Korea an uncertain and unreliable country for investors. In addition, the absence of widespread infrastructure such as roads, railways, and ports, discussed in Chapter 2, also make doing business in North Korea unattractive (Kang, 2018).

The enormous amount of institution building needed to attract investment could easily overwhelm the North Korean government. A stepwise approach to reforms would therefore be needed. In developing a framework to attract foreign investment into the country, we are guided by a layered “onion” framework (see Figure 6.1) that starts with countries that already have connections with North Korea at the innermost core and moves outward to an expanding list of more demanding countries as North Korea gradually reforms to attract more investment. For example, countries that have already been investing in North Korea, most notably, South Korea,

![Figure 6.1. A Layered Approach to Investment Reform](image-url)
but also Russia and China, are likely to continue investing in the country in the future. They are likely to be the most experienced in dealing with constraints on the ground and also least demanding as far as investment reforms go. Our detailed discussion of the KIC and the reforms needed to make this SEZ function better will largely address this set of countries. The overlap of existing SEZs, priority sectors, and currently investing countries further aids in the focusing of initial reforms on the innermost core of Figure 6.1.

There is a basic humanitarian presence of the United Nations in North Korea (United Nations, 2020). However, the country could use the entire panoply of assistance from other multilateral agencies such as the United Nations Development Programme, IMF, and the World Bank. We therefore discuss the set of conditions these organizations would expect before investing in North Korea next. The conditions needed for access to the WTO are also discussed in this context. Following this, we discuss the investment framework needed to attract capital from the governments and investors in emerging economies (who are likely willing to take more risks) and those from developed countries (who are likely to be the most demanding for investment conditions and standards).

Although much of the foreign investment in North Korea to date has been based on bilateral arrangements, and might continue to be so during the initial stages of reforms, as liberalization continues the source of investment will likely shift to the private sector, especially MNCs.

Increased Investment from Neighbors

Given its geography, North Korea could develop close bilateral trade ties with its neighboring countries, such as South Korea, China, and Russia, and eventually Japan.\(^1\) These include a role in shipping and logistics, because rail links in North Korea could connect South Korea to China and Russia. These countries may have interest in North Korea’s inexpensive manufacturing base and natural resources such as coal. North Korea may be suspicious of such agreements given how its neighbors (South Korea, Japan, and China) have exploited it for its resources before (Babson, 2019b). Yet, because these countries are some of the largest economies in the world, any improvements in relations could yield substantial economic returns. South Korea has suggested it would be willing to provide economic and technological assistance, and neighboring China is the world’s largest export market, providing serious development advantages to North Korea relative to other countries (Lee, 2019).

Investment from neighboring countries, especially South Korea and China, has been mainly into North Korean SEZs. As in other countries, SEZs have a mixed record in North Korea. The

\(^1\) Note that this set of countries need not be the same as those surveyed in the previous section. The aim there was to draw lessons from the development paths of other countries with which North Korea is similar along different dimensions. The countries mentioned here are ones with whom North Korea would be in a good position to do business, given geographic proximity and other considerations.
discussion of KIC and the stop-start nature of economic activity in other SEZs in Chapters 2 and 3 is indicative of some of the successes and failures of SEZs. As we will see in the investment frameworks discussed below, if established and operated properly, SEZs can attract investment from a broader set of countries as well. Likewise, reforms aimed at attracting investment from more remote countries can also solidify investment flows from neighbors.

Since SEZs, which have received investment from neighbors in the past, already exist, they offer an opportunity for a reform-ready North Korea to improve their operations and increase economic output. KIC, which has received more attention than other SEZs, offers an example to help understand the types of reforms needed. As mentioned in Chapter 2, KIC was closed in 2016. Demonstrating the economic benefits alone will not be enough for the KIC to reopen its doors. However, according to a report by the International Crisis Group, there are a few takeaways that both North Korea and South Korea, as well as other foreign investors, can learn from the KIC closure which are as follows:

- Foreign investors should be allowed to use internet and cell phones within the complex boundaries.
- Firms in the complex should be able to make wage payments directly to workers to ensure transparency in the flow of money.
- Firms in the complex should have some jurisdiction over hiring and wage level decisions.
- North Korean laborers should be allowed to reside within the complex to allow for a more efficient work environment and easier transfer of benefits.
- The politicization of the complex (discussed in Chapter 2) needs to be decreased to allow for smoother operations, independent from Peninsular affairs (International Crisis Group, 2019).

It is likely that these changes might not be possible to make in one shot and might have to be phased in. Eventually, the decrease in politicization can be achieved by having a more comprehensive legal framework that makes doing business in these economic zones less risky for investors (see the discussion below on IIAs).

The former KIC agreement had numerous issues that should be considered when creating legal frameworks for future SEZs. The 1998 North Korean Constitution lays the groundwork for the establishment of SEZs in North Korea, and by extension, allows for the constitutional authority to create a legal framework for these SEZs. Consequently, the KIC was regulated under the *KIC Act* which “govern[ed] all economic matters in the KIC exclusively” (You, 2011, p. 29). However, the act suffered from the following structural and implementation flaws:

- lack of adequate regulations
- vague language
- incomplete implementation of the laws
- too frequent intervention by the North Korean government
- ill-defined dispute resolution procedures (You, 2011).
Overall, the _KIC Act_ as it was enacted gave North Korea immense legal jurisdiction and leverage over the operations of KIC, which made economic operations within the complex incredibly susceptible to the political turmoil in the peninsula. Future SEZ legal frameworks should be wary of these potential issues, and aim for a degree of autonomy in the economic affairs of the SEZ, while crafting new agreements.

Initial investments have been made, and are likely to be made in the immediate aftermath of reforms, due to actions taken by countries, say, via official bilateral investment; therefore, bilateral ties are important. As reform proceeds, North Korea would need to develop the capacity to forge ties and sign investment agreements with multilateral organizations, corporations, and other investors.

**Preconditions for Involvement of Multilateral Organizations**

As mentioned in the introduction, President Moon Jae-in of South Korea believed that North Korea was ready for reform and very much willing to go through procedures such as accession to the IMF or the World Bank. Joining the IMF, and subsequently the World Bank, would force structural reforms in North Korea that would create a more conducive environment for investment (Lu, 2018). Perhaps the most important requirement for joining the IMF is economic transparency: “Members are required to share information on financial, fiscal, economic, and exchange policies that have international ramifications” (International Monetary Fund, 2019). Refraining from restrictions on exchange of foreign currency and striving for openness in economic policies affecting other countries are other key requirements. Reporting credible and transparent economic statistics will provide the external signaling that will attract investors and establish credibility and also allow them to better gauge the sectors and markets that are best suited for investment. As we will see below, lack of restrictions on currency exchange will also facilitate investment from foreigners.

Joining the IMF will provide the country with access to technical expertise, a larger pool of potential investors, and funds that will assist in its economic reform efforts. It will also help build government capacity through technical assistance. Subsequent membership in the IMF will also allow the country to receive assistance from the World Bank, further providing the resources and funds needed to foster development (da Costa, 2018). Indeed, the World Bank—owned by the governments of member nations—would coordinate with the IMF for admitting new members (World Bank, 2020b). Bringing the country into the international community also helps to build investor confidence in doing business, which has traditionally been a significant barrier to entry (Sharp, 2018). It could help the country to gain the credibility to access other multilateral institutions such as the WTO. For all these reasons, satisfying the prerequisites to join the IMF should be a top priority when North Korea is reform ready.
**Accession to the WTO**

China’s accession to the WTO in 2001 was a critical step in its emergence as an economic powerhouse and it brought the country enormous economic benefits (Ianchovichina and Martin, 2003). Although the WTO has lost much of its clout in recent years and regional rather than global free trade agreements have become increasingly the norm, accession to the WTO could still have important signaling benefits and global acceptance similar to joining the IMF besides providing greater market access.

Any sovereign state or customs territory that has full control in its trade policies is eligible to “accede to” the WTO. However, WTO members must go through a multistep process to be considered for membership and all members that join the system are entered on the basis of a negotiation—therefore, membership in the WTO comes with its own set of agreed on terms (WTO, 2020).

The government that is applying for membership must submit a memorandum that outlines all its current trade and related economic policies that pertain to WTO agreements. This is then examined by the working party that deals with the country’s case specifically. After the working party conducts a thorough review of the memorandum, the country applying for membership conducts bilateral negotiations with individual member countries in the WTO regarding tariffs and other topics. The working party finalizes the terms of accession in a draft membership treaty and lists schedules of the prospective member’s commitments to the WTO. Finally, the compilation of these steps is presented to the WTO General Council or the Ministerial Conference for approval. Accession into the WTO is contingent on a two-thirds majority vote of current WTO members who must agree to admit the prospective member state into the WTO. On receiving a green light for membership from the WTO, the prospective country would likely have to ratify the agreement in its parliament or legislature before officially signing the document (WTO, 2020).

Accession to the WTO is therefore a long and drawn-out process, involving negotiations with other countries. This may be best done after the country has gained access to the IMF and the World Bank, which can provide technical assistance for joining the WTO and also increase the credibility and standing among the Bank’s member countries and improve the chances they will vote to admit North Korea as a new member.

**IFIs and Institutional Investors**

Multilateral development banks, alternately referred to as IFIs during our discussion of Vietnam in Chapter 5, have traditionally been a source of financing development, especially infrastructure projects, in emerging markets and developing economies (EMDEs). In addition to the World Bank, the IFI most relevant to North Korea is likely to be the Asian Development Bank, and perhaps the Asian Infrastructure Investment Bank. However, as IFIs reach their capacity for financing, private sources become important. Institutional investors in OECD-member countries, such as pension funds, insurance companies, endowments and sovereign
wealth funds, are important sources of financing for many developing countries (Inderst and Stewart, 2014). IFIs can help attract private investment by providing “additionality” of several kinds: financial (IFIs can contribute their own funding and bring financing partners into specific projects with risk guarantees for high-risk, inexperienced markets), design (contributing technical expertise), policy (assist in improving policy and regulatory environment for investment), demonstration (back projects to demonstrate possibilities for success), and selection (support government agencies in selecting projects that align with EMDE development objectives) (Chelsky, Morel, and Kabir, 2013).

The concerns IFIs articulate in investing in EMDE infrastructure—lack of long-term political commitment, regulatory restrictions, instability, and lack of expertise—are all applicable to North Korea and parallel those discussed below in general investment frameworks. As international rating agencies begin accessing North Korean risk and providing credit ratings for the country, it might be more realistic for IFIs to gradually transition to including more private investors in infrastructure projects. The World Bank’s Multilateral Investment Guarantee Agency, which provides investors insurance against political risks such as expropriation, and nonhonoring of financial obligations would be particularly relevant for a country such as North Korea when it becomes ready for reforms (Multilateral Investment Guarantee Agency, 2020).

Applying Existing Investment Frameworks to North Korea

In addition to providing development assistance themselves, multilateral organizations such as the World Bank, UNCTAD, and the OECD, have also developed comprehensive guidelines and frameworks to advise countries on how to attract foreign investment. Rather than reinvent another general framework, we next discuss the relevant aspects of these framework and study their applicability to North Korea, a country these frameworks have not hitherto considered explicitly. We then use this analysis to guide the recommendations we make for a reform roadmap in Chapter 7.


This World Bank report (World Bank Group, 2018) starts by noting the importance of foreign investment to development, on which there is a rich literature. Based on an analysis of data collected from the Global Investment Competitiveness Survey, conducted among international business executives and other sources, the report makes many observations relevant for North Korea.

Factors affecting decisions of foreign investors: In decreasing order of importance, these factors are political stability and security, legal and regulatory environment, large domestic market size, macroeconomic stability and favorable exchange rate, available talent and skill of labor, good physical infrastructure, low tax rates, low cost of labor and inputs, access to land and
real estate, and financing in the domestic market. Restrictions on foreign equity ownership appear to be the biggest deal breaker. Restrictions on transferring and converting currency also pose serious hurdles. Predictable government conduct is at least as important as laws and regulations (World Bank Group, 2018). North Korea fares poorly on the major factors influencing investment. When FDI is motivated by access to natural resources, an important consideration for North Korea, tax and other incentives are of limited value. The degree of international tax competition is lower in extractive industries and agriculture and fishing but a bit higher in apparels (World Bank Group, 2018); all sectors of interest in our analysis as in Chapter 4.

The importance of IIAs: Governments play a key role in derisking private investment, especially in reducing political risks—such as expropriation and breach of contracts—and regulatory risks. Legal protection is provided by investor protection guarantees included in the country’s domestic legal framework as well as IIAs (World Bank Group, 2018). Given the lack of a well-developed legal framework, and the challenges in operating the KIC discussed earlier, IIAs may be particularly helpful in North Korea (Åslund, 2013).²

The importance of developing country investors: Developing (or emerging) economy MNCs are an increasing source of FDI, especially given the low confidence to invest prevailing today among traditional developed country MNCs. Developing country investors may be more willing to target higher-risk markets in host economies with weaker institutional quality. The “institutional advantage” argument states that managers of developing country MNCs are more accustomed to uncertainty and more adept in dealing with unpredictable regulatory practices and less transparent procedures. Developing country investors are relatively more willing to target smaller and closer economies in a “stepping-stone” strategy. Firms from developing countries do not always have the networks and experience of those in developed countries and therefore find it hard to compete in larger and more competitive markets. They expand to such markets after being successful in smaller, lower-income economies first (World Bank Group, 2018). This line of reasoning suggests that for North Korea, MNCs in countries such as China, Russia, and India—which are among the top developing country investors and interestingly also models of development discussed in Chapter 4—may be sources for investment, not just South Korea and other developed countries. This is one of the reasons we have included emerging countries as their own category in the layered framework presented in Figure 6.1. The East Asia and Pacific region, which include countries in the neighborhood of North Korea, is a major source of FDI among developing regions (World Bank Group, 2018). In this region, primary (natural resources) and manufacturing are key FDI sectors, which have been identified in Chapter 4 as priority sectors for North Korea.

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² A more comprehensive, global Multilateral Investment Agreement was negotiated between 1970 and 1998, but was never concluded, though there have been recent calls for these.
Considerations for investing in fragile and conflict states (FCS): Insights surrounding investment into FCS are highly relevant to North Korea, even though the country itself is not explicitly mentioned or discussed. Risks to investment are security and value-chain disruptions due to regulatory, financial, and reputational uncertainty; governments lack capacity to perform basic functions; informal and noninclusive institutions fill the governance vacuum; and their interaction with businesses are motivated by rent extraction. Investment in FCS has been low and concentrated on resource-rich economies. Regional investors may have a comparative advantage in FCS relative to global firms (for North Korea this points to South Korea, China, and Russia). This advantage comes from the ability to leverage local knowledge, take greater risks, and accept lower returns. Regional integration agreements could help to attract investment. Investors are less likely to commit to large projects (except in extractives) and tend to create fewer jobs (World Bank Group, 2018). In North Korea, the trade-off between getting investment for capital-intensive sectors versus creating jobs might be particularly stark. Sectors in FCS most likely to get investment that overlap with the priority sectors identified in Chapter 4 are food, textiles, agriculture, and mining and quarrying.

Investors tend to concentrate investment spatially in the most stable territories. Spatial solutions that create secure zones for investors to operate also contribute to reducing the security risk and make investment opportunities more accessible. One way to achieve this is via SEZs. In addition to minimizing geographic exposure to conflicts, SEZs can address infrastructure, regulation, and skill constraints, and a critical mass of firms also helps. Previous experience in SEZs has been mixed due to insufficient state capacity in formulating and implementing a SEZ package (World Bank Group, 2018). As discussed in Chapters 2 and 3, North Korea has a few SEZs which have faced these challenges, but also present opportunities for the future.

The most severe constraints in FCS are intellectual property rights, judicial independence, and dispute settlement. The burden of government regulation is rated below average for severity. Quality of electricity is a serious hurdle (World Bank Group, 2018). As noted in Chapter 2, North Korea faces critical shortages in electricity supply.

Given limited state capacity and urgency of reforms, proper sequencing and prioritization of interventions is needed. The aim should be to secure short-term gains and build confidence among investors by signaling change and the willingness to reform while building momentum for deeper long-term institutional transformation. The most important of such confidence-building measures that need to be sequenced first are removing barriers to investment entry and addressing infrastructure constraints. Second-stage interventions include value chain development through skills building, improving access to finance and technology, and connecting producers to markets. The fastest-reforming countries took two decades to achieve a quality, functioning governance regime; that is, deeper institutional reforms take a longer time. Sectors offering most immediate promise should have priority. Traditional investment climate reforms (such as licensing, permitting, and administrative barriers) have their limits in FCS. It is important to go beyond
simplifying procedures and respond more clearly to the challenges and characteristics of FCS. In other words, rather than mimic countries at the frontier which have had decades or even centuries to develop, the aim should be to go for the best fit rather than best practices (World Bank Group, 2018). These critical insights regarding FCS will guide us in developing a sequenced reform roadmap for North Korea.

**Insights from UNCTAD’s World Investment Report 2018**

This report (UNCTAD, 2018) is complementary to World Bank’s *Global Investment Competitiveness Report*, especially in discussing institutional details.

**The nature of IIAs:** As noted above, IIAs are particularly important where a well-developed legal framework is not available. Most of today’s new IIAs follow UNCTAD’s Road Map (WIR15), which sets out five action areas (safeguarding the right to regulate, while providing protection; reforming investment dispute settlement; promoting and facilitating investment; ensuring responsible investment; and enhancing systemic consistency) or include clauses that were set out in UNCTAD’s Investment Policy Framework for Sustainable Development (WIR12, updated in 2015; UNCTAD, 2018). Investor-state dispute settlement clauses are quite typical for IIAs; 95 percent have investor-state dispute settlement clauses (less common in national investment laws) (UNCTAD, 2018). Recall from the earlier discussions that disputes were one of the challenges faced by KIC, making dispute-resolution clauses relevant for IIAs written by North Korea. One novel aspect seen in IIAs is in reducing the role of investor expectations—“the mere act of taking, or the failure to take an action that may be inconsistent with an investor’s expectations does not constitute a breach” (UNCTAD, 2018, p. 98). This would be particularly helpful in allaying any concerns North Korea might have on unreasonable investor demands even as it gains experience with IIAs. National investment laws and IIAs are supposed to be complementary. Therefore, it is not clear if North Korea could get away with just focusing on IIAs, because signing countries might first expect a well-developed national investment law. For many developing countries, the national investment law is at the core of the domestic regulatory framework for foreign investment. The new generation of IIAs is also taking into account sustainable development (UNCTAD, 2018).

**The role of SEZs:** As noted earlier, SEZs are geographic areas where the rules of business are different. In general, the business environment in an SEZ is more liberal from a policy perspective and more effective from an administrative perspective than in the rest of the country. These zones usually offer fiscal incentives, infrastructure and services, streamlined business registration and customs procedures, facilitated processing of labor and immigration permits, and other investment facilitation services. SEZs are mainly used by developing countries, where they have played a catalytic role in supporting structural transformation. SEZs can also function as laboratories for experimentation with new policies and approaches. This is particularly relevant for North Korea where sudden and large-scale reforms may be hard to enact. A special pilot
zone, a form of SEZ that is designed to experiment with economic reform measures and provide demonstrative effects, could be particularly helpful in North Korea (UNCTAD, 2018).

SEZs typically offer a suite of infrastructure and services to firms operating in the zone. They often facilitate rapid transfer of goods at lower costs, offering shipping ports, roads or direct linkages to airports. Key infrastructure includes stable power and water supplies, which can be a challenge to maintain in many developing countries. In addition to these infrastructure benefits, many offer management assistance to companies operating within the zone, such as for business licensing application or tax filing procedures. Some provide assistance with labor-related issues, for example, through an on-site labor and human resources bureau that helps resolve labor disputes, or with (environmental) compliance issues. SEZs and regional economic cooperation initiatives can be synergistic (UNCTAD, 2018).

Not all SEZs are successful. Their mixed record arises because it sometimes costs more to maintain SEZs than the benefits they bring to the host country. In addition, SEZs have often failed to extend benefits outside their enclaves. Poor site location is a common obstacle to SEZs (UNCTAD, 2018). It is important therefore to not consider SEZs as a panacea for North Korean development (as the experience with KIC shows), but as one of the available tools, which when properly structured and operated can be valuable in attracting foreign investment and fostering development.

**The role of industrial policies:** After the great financial crisis, the number of countries adopting industrial policies—especially to boost productivity in manufacturing and supporting infrastructure—has increased, including among developing countries. Foreign investment policies are an important element of industrial policies. A key driver of these policies is the aim to be part of global value chains, by linking the local companies and economy with global ones (UNCTAD, 2018)—which Poland did effectively, as we saw in Chapter 4—but being part of global value chains might be too aspirational for North Korea during the early stages of its reforms. Once confidence in North Korean industries and institutions builds over time in the global community, linkages of value chains with those of other countries will likely happen.

Myanmar and Vietnam are countries identified in the region for attracting a large share of FDI flows in 2018. Expansion of the Thilawa SEZ is one factor in Myanmar. Myanmar also allowed foreign investors to hold up to 35 percent of the shares of an enterprise and still have it labeled as a local company and made it easier for foreign companies to engage in trading. Vietnam has adopted several industrial policy packages, but they are more recent, once it had achieved a certain level of development discussed in detail in Chapter 4. Both the design and effective implementation of industrial policies also critically depend on institutional capacities. However, there are “build-up” policies for specific industrial sectors such as natural resource processing and light manufacturing that may be relevant for North Korea. Most common build-up models provide SEZs, investment facilitation, FDI restrictions, and performance requirements (UNCTAD, 2018). North Korea might find the key elements of a build-up model—policies that are industry-specific, more government-led, a selective and gradual opening, and driven by
domestic and regional demand—appealing. The report recommends that financing be aimed at micro, small, and medium enterprises, which may be relevant to North Korea’s Jangmadang. This is especially so because financing constraints are one of the biggest hurdles faced by entrepreneurs around the world (Kerr and Nanda, 2009). The Jangmadang are small and informal, and for them to expand, financing will be critical.

**Insights from UNCTAD’s Investment Policy Framework for Sustainable Development**

This UNCTAD report (UNCTAD, 2015) lists the four best sustainable development investment practices, which are as follows:

Establishing a firm commitment to invest for sustainable economic development; balancing state commitments with investor obligations; ensuring balance between investment protection commitments and a regulatory space for development; and shielding developing countries from unjustified liabilities and the high procedural costs associated with investments.

Sustainable economic growth and development should not be viewed as a “luxury good” relevant only after a certain level of national income is attained, but should be a core tenant for a developing economy at any stage. In fact, the above principles embody not only the responsibility of the developing country toward sustainable development, but also that of the international investment community toward the recipient developing country. In this sense, sustainable development is as much protection as it is commitment. Therefore, given the intricacies of global investment, North Korea should establish clear sustainable economic development goals before opening its doors for business. Sustainability goals will be especially critical for the country because its abundant natural mineral resources would play a role in its development. As such, controlled efforts to monitor mineral extraction and refinement processes, ensuring responsible investment practices, and assuring investor confidence in costly investment ventures, will play important roles.

Improving SEZ operability and developing a dispute settlement framework to attract investment from neighboring countries in existing facilities, taking the necessary steps to join the IMF, the World Bank, WTO, and other IFIs to access development capital and obtain technical assistance, and improving infrastructure and electricity, and using IIAs as a stepping stone to developing a full-fledged national investment law to induce investment from developing and developed country MNCs, are elements of the investment framework we have developed for North Korea. Building a framework for investment starting with the least demanding investors to the most demanding ones, captured in the layered framework in Figure 6.1, naturally lends itself to suggesting a sequenced roadmap for reforms. We pursue such a roadmap in the next Chapter.

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3 Sustainable development in this context refers to the UN’s goal of achieving a better and more sustainable future for all, addressing “…global challenges we face, including poverty, inequality, climate change, environmental degradation, peace and justice” (UNCTAD, 2015, p. 157).
by recommending reforms for the short term (aimed at attracting investment from currently investing countries and initiating connections with the IMF and IFIs), medium term (aimed at solidifying connections with the multilateral institutions and attracting investment from developing country MNCs that are willing to take greater risk), and long term (attracting investment from developed country MNCs and the most demanding investors).
7. Reform Roadmap: A Synthesis

Assessing the economic conditions of North Korea, identifying priority sectors to target for development, collating lessons learned from the experiences of specific countries, and analyzing the relevance of existing general investment frameworks for North Korea put us in a position to synthesize and recommend reforms North Korea needs to make to embark on economic growth and attract foreign investment whenever it is ready to engage with the international community. Although such recommendations are strewn across the previous sections where the above topics are discussed, a synthesis of these reforms in the form of a roadmap would likely be useful and is provided in this section. The required reforms when viewed in a structured fashion might be less overwhelming for policymakers.

We present the roadmap using a few different perspectives. The first looks at a perspective of timing and presents a list of steps that are classified as short, medium, and long term. This provides a specific path for policymakers to follow in implementing the roadmap. It is influenced by the layered approach we have discussed above and captured in Figure 6.1, based on who is likely to invest earlier in North Korea, and by the need for prioritized and sequenced reforms in FCS emphasized by the World Bank’s *Global Investment Competitiveness Report*.

The next perspective presents these recommended steps in the form of a table, with priority and ease of implementation as the two dimensions. We classify a step as easier to implement if the tasks are simpler, the step takes advantage of current strengths, and is less fraught with political risk. Needless to say, the classification of a step as a higher priority or relatively easier one is subjective and is based on our analysis, judgment, and our understanding of the country. Moreover, in a country that would essentially be starting from scratch, priority and ease of implementation are relative concepts. Faced with time and resource constraints, North Korean policymakers could choose to implement the easier steps, even if they are not high priority, to establish momentum for reform. They could also choose to implement a high-priority step, even if it difficult, to overcome a major obstacle or constraint to development, thereby making the future path easier. Although we have presented our preferred ordering of reform steps, North Korea might use the priority ease of implementation matrix to follow a different route based on local contingencies and constraints.

Finally, we present the same steps grouped according to the type of activity being undertaken. This shows whether a step deals with infrastructure improvement, building human capabilities, policy reform, legislative reform, or institution building. All of these are important and interrelated, but policymakers might prioritize one of these areas above another, and this perspective will pinpoint the steps needed in each specific area.

As mentioned in Chapter 6, although much of the foreign investment is likely to be based on bilateral arrangements during the initial stages of reforms, as liberalization continues, the source of investment will likely shift to private MNCs. When we refer to investment from countries,
whether we mean bilateral arrangements with sovereign states or private entities located within these countries should be clear from the context.

Although some reforms are more important for some sectors than for others, many of our proposed reforms cut across all of our priority sectors. For example, addressing infrastructure needs will bolster the electricity as well as transportation and logistics industries directly but will also benefit light manufacturing by improving supply chains and making inputs less expensive. Increasing FDI and joining the World Bank will potentially benefit all our priority sectors as North Korea sells more agricultural goods, minerals, and manufactured goods to the rest of the world. Given the lack of detailed data, we leave the discussion of step-by-step industry specific granular reforms for future research.

Prioritized Steps in the Roadmap

Among the countries we studied, Vietnam and China are the best examples of a gradual and sequenced approach to reforms. Given the sheer volume of reforms that have to be enacted and the enormous amount of institutional capacity building that needs to take place, we recommend that North Korea follows a gradual approach. Indeed, such an approach might be the only option available to it. A gradual and sequenced approach reflects the reality and uniqueness of the North Korean regime, because the leadership and the elite groups in the country are likely to be wary of the political destabilization that economic reform and market openness could bring. This is also consistent with countries in crises following the shock therapy approach to reforms, whereas those with stability, a gradual approach; the North Korean situation is one of persistently low levels of development rather than a specific economic crisis. Therefore, it makes sense to list and discuss reforms needed in the short, medium, and long run.

Short Term (Within 5 Years): Basic Steps to Initiate Economic Development

- **Improve operation of existing SEZs such as KIC:** Our “onion framework” suggests starting with countries with which North Korea has existing relationships, to attract investment into SEZs that are already in place. In Chapters 2 and 3, we saw the existence of several SEZs in North Korea, with varying degrees of functionality and effectiveness. These need to be revitalized. There is existing physical and institutional infrastructure in these SEZs that could be built on as an initial step. Among the SEZs, KIC would be a good place to start. We have listed in Chapter 6 the required operational reforms, such as greater autonomy for firms in the SEZs, and legal reforms to investment agreements, building on existing frameworks such as the KIC Act. Developing such agreements with countries that have invested in North Korea in the past would also be helpful in developing other IIAs in the future.

- **Join the IMF:** As seen in Chapter 5, the role of IFIs in the development of Vietnam was crucial. North Korea needs to attract development investments and technical assistance from the World Bank and other IFIs (Babson, 2019b). Joining the IMF is a prerequisite for joining the World Bank, and economic transparency is in turn a key requirement for joining the IMF. Such transparency would also be helpful in later attracting investment.
from private investors in other countries, who need reliable information and data to evaluate the risk-return profile of their investments. Although complete transparency might take longer to achieve, satisfying the minimum requirements to begin the process of international integration is crucial.

- **Address infrastructure needs, especially on electricity:** The World Bank’s *Global Investment Competitiveness Report* discussed in Chapter 6 notes that electricity is a serious hurdle to investment in FCS and includes infrastructure creation and improvement as one of the most important confidence-building measures. North Korea has significant transportation networks and electricity infrastructure, but they were built in the 1960s and are in serious need of investment (Lee, 2019). Chapter 2 noted, for instance, the low “capacity factors” in electricity generation. Investment by IFIs would be particularly useful to help repair this dilapidated infrastructure, and as we saw in Chapter 6, IFIs can also provide “additionality” by attracting private investors to the infrastructure sector. Because joining the IMF and then joining the IFIs such as the World Bank will take time, North Korea can aim to first improve electricity for the existing SEZs with the help of currently investing countries and expand this to the rest of the country as IFI support increases. Naturally, this step, as many of the others, will also help domestic investors, especially as development takes root and people become wealthier, and save and invest more.

- **Remove barriers to investment entry:** This priority is also suggested by the *Global Investment Competitiveness Report* as an important confidence building measure. Legal and administrative barriers, such as preventing investment in certain sectors, insisting on a large share of local ownership, and preventing foreign exchange convertibility will deter investors. We recommend that North Korea focuses on ease of investment entry into existing SEZs as discussed above. Again, this is likely to be an effective blueprint for attracting FDI from a broader set of countries, which we discuss below.

- **Undertake small projects to demonstrate intent and commitment:** A reform-ready North Korea will have a long way to go to demonstrate to international investors that it is a country deserving of their attention and capital. The signal that is sent globally by successfully undertaking small initiatives with past investors is therefore crucial. This is one of the reasons we have emphasized the revitalization of existing SEZs before embarking on new ones. However, as UNCTAD’s *World Investment Report* notes (see Chapter 6), special pilot zones, which are a special form of SEZs to experiment with economic reforms and demonstrate results, would be one other way of initiating new projects. The same report also argues for “build-up” policies for specific industrial sectors such as natural resource processing and light manufacturing; these policies, besides being industry specific, are gradual, government led, and regional demand driven, whereas SEZs can be more export focused.

- **Formalize and expand the Jangmadang:** Early in their respective reforms, China, Vietnam, and Poland legalized private ownership of businesses to leverage the incentives arising from profit-maximizing behavior. As seen in Chapter 2, even in an environment that tolerates private enterprise at best, and suppresses them at worst, North Koreans have shown they are capable of entrepreneurship. As seen in Figure 2.2, Jangmadang, informal markets, have proliferated. Recognizing them as legal and regulating them lightly will further unleash this entrepreneurship. This will also allow broader-based economic development rather than a concentration of economic activity within the SEZs.
Medium Term (in 6–10 Years): Enhanced Steps for Broad-Based Development

- **Join the World Bank and the Asian Development Bank:** Joining the IMF will allow North Korea to apply for membership in the World Bank. The Asian Development Bank is another IFI that North Korea should aspire to join. Joining these IFIs would allow North Korea to access much needed development capital and know-how.

- **Develop IIA and dispute settlement frameworks:** As discussed in Chapter 6, both the World Bank’s *Global Investment Competitiveness Report* and the UNCTAD’s *World Investment Report* note the importance of IIAs in attracting and managing foreign investment. Dispute settlement is a severe constraint in FCS, and IIAs typically include dispute settlement clauses. North Korea needs to develop a framework to efficiently generate these IIAs. Initially, agreements are likely to be bilateral, that is, at the country level. Disputes at the KIC, for example, were with South Korea. Eventually, as reforms progress, these would need to be written with private investors. Arbitration is an effective means of resolving commercial disputes, and modernized laws call for setting up arbitration centers (Guislain, Hornberger, and Kusek, 2011).

- **Undertake basic judicial reforms aimed at investor protection:** Although IIAs are particularly important where a well-developed legal framework is not available, ultimately national investment laws are intended to be complementary to IIAs. A basic domestic legal framework that protects investors and treats them fairly is essential. For instance, without demonstrating that investments will be safe from nationalization, it will be hard to entice investors (Cronin and Silberstein, 2018).

- **Set up SEZs to attract investment from emerging economies:** Given the higher risks developing countries are willing to take, these countries should be targets for the next set of SEZs. North Korea can go beyond bilateral arrangements and attract MNCs from countries such as China and Russia, with whom it already has economic ties, and other countries such as India and Thailand, with whom it trades but does not have investment arrangements. Needless to say, if developed country MNCs are also induced to invest at this stage, it would be a good outcome.

- **Build skills for value chain development:** This is a second-level reform suggested for FCS by the World Bank’s *Global Investment Competitiveness Report*. As seen in Chapter 4, North Koreans developed skills related to manufacturing during the Cold War. Workers have also acquired skills working in countries such as Poland, Russia, and China. So, there exists a skill base to update and expand through education and training programs, while creating job opportunities for the upskilled workers at home. Related to job creation, and as mentioned earlier, North Korea today is a very urban society and is much more similar to Eastern European countries, such as Poland, at the end of the Cold War than to pre-reform China or Vietnam. Similar to Poland and other former Soviet satellites, North Korea may face the challenge of existing industries becoming uncompetitive when it opens up to foreign trade and investment (Stangarone, 2019). As in Poland, the government of North Korea will need to let less competitive sectors shrink so that both capital and labor can be reallocated to areas where it does have a competitive advantage.
• **Improve access to finance, technology, and markets:** This is another second-level reform suggested by the *Global Investment Competitiveness Report*. Although multilateral institutions and FDI are great sources of development finance and technology, the countries we examined in Chapter 5 also developed a local financial system for domestic firms. Many of these domestic firms typically become connected to MNCs situated in the country via supply chain linkages, making access to finance for local firms important. A financial sector is almost entirely lacking at present in North Korea, with few commercial or personal banking institutions in the country. Other parts of the economy, from agriculture to industry, and foreign investors will also require a stable domestic financial sector for growth (Cronin and Silberstein, 2018). The formalization of the *Jangmadang* in the short term will allow them to access finance from this sector and expand. Connecting producers to markets is especially important for smaller firms who would not have the resources for marketing their goods and services.

• **Address inequality:** Currently, as North Korea develops, inequality is already growing across the *donju*, government officials, and the general working population. There is a clear danger of “elite capture” of reforms, and North Korea should therefore take actions akin to Poland to make sure that all citizens share the benefits of economic growth. These include creating safety nets, investing in education, and providing health care for the poor.

**Long Term (Beyond 10 Years): Advanced Steps to Sustain Reforms and Grow**

• **Apply to join the WTO:** Similar to the goal Poland set for EU accession, which energized the country, North Korea could set a goal of WTO accession to provide a focal point for its reforms. Given North Korea’s currently limited export market, WTO membership and integration with global supply chains would boost demand for its goods. Smaller countries face limited domestic markets for their goods, and therefore there are many benefits of export-driven growth. North Korea could follow a similar pattern, investing in key industries with high export potential (Lee, 2019). Our choice of priority sectors in Chapter 4 was driven exactly by this motivation. As we saw in Chapter 6, being admitted to the WTO is a long process and is therefore best done after North Korea has built bridges to other countries through investment reform in the short and medium term. For instance, even though China started its reforms in the 1970s, it was three decades later, in 2001, when it joined the WTO.

• **Undertake broader macroeconomic reforms:** North Korea could emulate the stabilization policies followed by Poland, such as fiscal discipline, a monetary policy that targets inflation, and regulation of the banking and financial sectors to maintain stable growth, but to do so will require significant reforms to their economic institutions. Indeed, North Korea will likely need to give economic institutions some degree of independence and authority, because there need to be checks on any return to misguided economic policies of the past (Lee, 2019). The country will also likely need to overhaul its monetary system. Most North Koreans are distrustful of the North Korean won, and store their savings in U.S. dollars, Chinese renminbi, or South Korean won. Significant assistance to the North Korea’s central bank is necessary to train officials in oversight of banks, macroeconomic policy, and data collection, which would likely result from the short-term step of joining the IMF. The financial development started during the reforms in the medium term is likely to expand once these macroeconomic reforms have been carried out. International investors need foreign exchange to conduct business globally, therefore
a well-functioning foreign exchange market with few restrictions on convertibility is required to attract investors.

- **Institute broader judicial reforms to improve governance and attract FDI:** With basic judicial reforms for investor protection instituted in the medium term, North Korea will have to build on these to attract private investment from a broader set of countries. A few principles that can guide a comprehensive framework for laws and regulation are fair treatment of investors, across groups within North Korea, as well as those from other countries; clarity and transparency to allow efficient commercial transactions; sufficient security for investors; fair protections for the greater public good; and minimal bureaucracy. Public institutions that provide officials with incentives to supply services to the people and investors efficiently, without corruption and rent seeking, are needed to support this framework (Guislain, Hornberger, and Kusek, 2011).

- **Simplify business procedures:** As the *Global Investment Competitiveness Report* notes, traditional investment climate reforms, such as licensing, permitting, and administrative barriers, take time, just as the deeper institutional reforms listed above. These can be reserved for the longer term, but such reforms are ultimately needed to encourage entrepreneurship, expansion of businesses, and facilitate growth.

- **Set up SEZs to attract investment from MNCs in developed countries:** Armed with a well-developed legal framework, especially for the protection of investors and intellectual property rights, and having simplified its business procedures, North Korea would be in a position to attract private investment from MNCs in developed countries (the outermost layer of the “onion” in Figure 6.1). Although such investment need not be confined to SEZs, the experience North Korea would have gained in the short and medium term with SEZs aimed at neighbors and emerging economies would put it in a good position to encourage investment flows from developed countries into existing and new SEZs.

- **Privatization of state-owned enterprises:** Given North Korea’s centrally run state enterprises have shown little improvement in production efficiency and growth since the “Arduous March” of the 1990s, it will need to find a way of privatizing its remaining state-run industries, especially for its abundant natural resources (Soo-ho and Seok-ki, 2017, p. 6). The “Loans for Shares” program in Russia, discussed in Chapter 5, can serve as both a model and caution for North Korea’s development. Although it was a well-intentioned effort to divest government stakes in large state-owned enterprises (many of them in the natural resources sector) and to spread ownership more broadly, its flawed implementation gave rise to the oligarchs and uneven economic participation by the country’s citizens. Therefore, North Korea will need to find a privatization model that can follow the intent of the Russian example, while mitigating issues of potential government corruption to prevent an oligarchy from emerging in North Korea. The steps taken to address inequality in the medium term could help elevate the importance of implementing a privatization program fairly, both within the government and with the public.

**A Priority Ease of Implementation Matrix**

In Table 7.1, we present a priority ease of implementation matrix as discussed above.
Table 7.1. Roadmap Steps by Priority and Ease of Implementation

<table>
<thead>
<tr>
<th>Ease of Implementation</th>
<th>High-Priority Steps</th>
<th>Subsequent Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easier to implement</td>
<td>Improve operation of existing SEZs, such as KIC</td>
<td>Develop IIA and dispute settlement framework</td>
</tr>
<tr>
<td></td>
<td>Undertake small projects to demonstrate intent and commitment</td>
<td>Set up SEZs with emerging economies</td>
</tr>
<tr>
<td></td>
<td>Formalize and expand the <em>Jangmadang</em></td>
<td>Build skills for value chain development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undertake basic judicial reforms aimed at investor protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improve access to finance, technology, and markets</td>
</tr>
<tr>
<td>Harder to implement</td>
<td>Join the IMF</td>
<td>Address inequality</td>
</tr>
<tr>
<td></td>
<td>Join the World Bank and the Asian Development Bank</td>
<td>Apply to join the WTO</td>
</tr>
<tr>
<td></td>
<td>Address infrastructure needs, especially in electricity</td>
<td>Undertake broader macroeconomic reforms</td>
</tr>
<tr>
<td></td>
<td>Remove barriers to investment entry</td>
<td>Institute broader judicial reforms to improve governance and attract FDI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Simplify business procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set up SEZs to attract investment from MNCs in developed countries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Privatization of state-owned enterprises</td>
</tr>
</tbody>
</table>

Roadmap Steps by Type of Activity

Finally, Table 7.2 organizes the roadmap steps according to the types of activities: infrastructure improvement, building human capabilities, policy reform, legislative reform, or institution building.

Table 7.2. Roadmap Steps by Type of Activity

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Roadmap Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure improvement</td>
<td>Improve operation of existing SEZs, such as KIC</td>
</tr>
<tr>
<td></td>
<td>Address infrastructure needs, especially in electricity</td>
</tr>
<tr>
<td></td>
<td>Set up SEZs with emerging economies</td>
</tr>
<tr>
<td></td>
<td>Set up SEZs to attract investment from MNCs in developed countries</td>
</tr>
<tr>
<td>Building human capabilities</td>
<td>Formalize and expand the <em>Jangmadang</em></td>
</tr>
<tr>
<td></td>
<td>Build skills for value chain development</td>
</tr>
<tr>
<td></td>
<td>Address inequality</td>
</tr>
<tr>
<td>Policy reform</td>
<td>Remove barriers to investment entry</td>
</tr>
<tr>
<td></td>
<td>Improve access to finance, technology, and markets</td>
</tr>
<tr>
<td></td>
<td>Undertake broader macroeconomic reforms</td>
</tr>
<tr>
<td></td>
<td>Simplify business procedures</td>
</tr>
<tr>
<td></td>
<td>Privatization of state-owned enterprises</td>
</tr>
<tr>
<td>Legislative reform</td>
<td>Develop IIA and dispute settlement framework</td>
</tr>
<tr>
<td></td>
<td>Undertake basic judicial reforms aimed at investor protection</td>
</tr>
<tr>
<td></td>
<td>Institute broader judicial reforms to improve governance and attract FDI</td>
</tr>
<tr>
<td>Institution building</td>
<td>Undertake small projects to demonstrate intent and commitment</td>
</tr>
<tr>
<td></td>
<td>Join the IMF</td>
</tr>
<tr>
<td></td>
<td>Join the World Bank and the Asian Development Bank</td>
</tr>
<tr>
<td></td>
<td>Apply to join the WTO</td>
</tr>
</tbody>
</table>

81
8. A North Korea Open for Business: Benefits for All

We have used attracting foreign investment as an organizing principle for structuring economic reforms in North Korea. We have built a layered framework for investment starting with the least demanding investors to the most demanding ones, which naturally lends itself to recommending a sequenced roadmap for reforms. We have recommended improving SEZ operability and developing a dispute settlement framework to attract investment from neighboring countries in existing facilities; taking the necessary steps to join the IMF, the World Bank, WTO, and other IFIs to access development capital and obtain technical assistance, and improving infrastructure and electricity; and using IIAs as a stepping stone to developing a full-fledged national investment law to induce investment from developing and developed country MNCs.

It is hoped that when the North Korean regime sees the benefits of opening up to foreign investment and carrying out economic reforms will both benefit itself and its people, it will eventually be inclined to do so. We have chosen a set of comparison countries to show such reforms can happen in a variety of political systems. We have also suggested a broad menu of options and reform steps. Given this, North Korea can choose a path to reform that best fits its needs and at the pace it is willing to make changes.

The humanitarian appeal to the rest of the world in improving the lives of some of the poorest people in the world are obvious. But North Korea that is on a solid economic footing and benefits from foreign investment might also make for a more peaceful neighbor and a cooperative global citizen. International trade and foreign investment are based on a notion of a positive-sum game, and investors in other countries will reap a high return from this nascent market, provided North Korea establishes a stable environment and undertakes the reforms we have discussed to make such investment attractive.

In the interest of a comprehensive and country-level focus, and because of the lack of reliable data at a fine enough granularity, we have not delved deeply into specific reforms needed for each of the priority sectors we have identified. Also, although we have noted the danger of “elite capture” of reforms and the potential exacerbation of inequality, we have only touched on the steps needed to ensure broad-based development and improved well-being of all subpopulations. Acquiring reliable demographic and socioeconomic data at a disaggregated level would allow us to study policies that help specific groups of people. These would be fruitful areas of inquiry to pursue in the future.
Appendix. Constructing Similarity Indexes

In this appendix, we briefly discuss how the indexes used in Chapter 5 to assess cultural, demographic, and economic similarities between North Korea and the comparison countries were constructed. In considering similarity of characteristics, we assigned 0 if the countries were very different, 1 if they were somewhat similar, 2 if they were very similar, and 3 if they were close to identical. Recall from Chapter 5 that the comparison is between North Korea in approximately 2020 and each country at the start of its reforms. The reference year for India, Vietnam, Russia, and Poland is 1990. This was the year after the fall of the Soviet Union, when market reforms were taking place in Poland and Russia. It was also a year close to the pivotal economic reforms in Vietnam (1986) and India (early 1990s). The reference year for China is 1970, and it is 1960 for South Korea.

Cultural Factors

In determining our measure of similarity between cultural factors, we considered language, religious freedom, social organization, ethics/philosophical values, history, and politics. Because of the qualitative nature of these factors, the authors used their best judgement, particularly in categories such as social organization, where numerical designations were especially difficult to make. By virtue of geographic proximity and historical interactions, countries such as China, South Korea, and Vietnam are more similar to North Korea culturally than the former members of the Soviet Union or India (Table A.1).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>China</th>
<th>South Korea</th>
<th>Vietnam</th>
<th>Russia</th>
<th>Poland</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Religious freedom</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Social organization</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ethics/philosophical values</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>History (similar paths)</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Politics</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Perfect score:</strong> 18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10</td>
<td>11</td>
<td>9</td>
<td>7</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Demographic Factors

We used literacy rate, urbanization, age structure, education level, and population density in determining demographic similarity between North Korea and the comparison countries. Data from the World Bank’s World Development Indicators were used for each country’s reference
year. For age structure, we used the percentage of the population that were of working age, 25–64, to determine similarity. For urbanization, we used the percentage of the people who lived in rural areas (compared with the total population at the time), and we used secondary education levels to obtain education percentages. Finally, we used population per square kilometer to determine population density.

We then calculated the percentage difference relative to the latest North Korean statistics for each country for each characteristic. Countries that had percentage differences of 25 percent or less for each given factor received a score of 3 (almost identical), those that had percentage differences between 26 and 50 percent received a score of 2 (very similar), countries that had percentage differences of 51–75 percent received a score of 1 (somewhat similar), and countries that had percentage differences of 76 percent and up received a score of 0 (very different). Needless to say, these assignments are based on our judgment, and different assignments may yield different scores. However, we believe that small differences in how similarity is calculated would be unlikely to overturn the qualitative conclusions of our analysis.

As seen in Table A.2, Russia and Poland are the closest to North Korea in demography, and China, South Korea, and India are the farthest.

### Table A.2. Characteristics Determining Demographic Similarity

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>China</th>
<th>South Korea</th>
<th>Vietnam</th>
<th>Russia</th>
<th>Poland</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literacy (percent)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Urban (percent)</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Age structure</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Education (percent more than high school graduate)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Population per square kilometer</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Perfect score: 18</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>2</td>
</tr>
</tbody>
</table>

### Economic Factors

To determine the similarity of the economies of our comparison countries to North Korea’s economy, we selected six factors from the World Bank’s *World Development Indicators*: infrastructure, FDI, GDP per capita, and the sizes of the industrial, agricultural, and public sectors. We took data for all countries from the World Bank, although in several cases North Korean data needed to be obtained from other published sources such as those used in Chapters 2 and 3. To measure infrastructure, electricity production in Kwh per capita was used. FDI was measured by net inflows in 2020 U.S. dollars. Constant dollar terms were used in any case where the measures were in monetary terms, although they could not be adjusted for PPP due to the impracticalities of not only adjusting by location but time (the temporal aspect is addressed
below). The FDI numbers were not adjusted by population, because FDI provides benefits such as technical expertise, import and export infrastructure, and supply chain connections regardless of population size; furthermore, companies considering FDI may not take local population size into consideration if they are primarily planning on exporting manufactured goods. GDP per capita is measured in constant 2010 dollars. We measured the sizes of the industrial, agricultural, and public sectors as percentages of GDP. If data were not available in a country for its reference year, the next closest time period was used; for example, if there were no data for China in 1970, the data from 1980 were used.

To scale the data and account for diminishing marginal returns to the various factors, we used a logarithmic transformation of the data. Without such a transformation, if a country had 50-percent less electricity generation than North Korea, and another had 50 percent more, the two would be considered equidistant in economic similarity. Yet the former country would need to double its electricity generation capacity to reach North Korea, whereas North Korea would only need to increase its production by 50 percent to reach the latter. Once the log transformation was done, a country was considered very similar to North Korea if its value (rounded to one decimal place) was within plus-or-minus 5 percent of North Korea’s value. A country was considered somewhat similar if it was within a plus-or-minus 20 percent range and was considered different if the value was outside 20 percent in either direction. The results of this exercise are presented in Table A.3. India and South Korea are the most similar to North Korea, and Russia is the least similar.

Table A.3. Characteristics Determining Economic Similarity

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>China</th>
<th>South Korea</th>
<th>Vietnam</th>
<th>Russia</th>
<th>Poland</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>FDI</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Industrial sector</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Agricultural sector</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Government spending (percent GPA)</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

*Perfect score: 18*

| Total                        | 5     | 7           | 5       | 4      | 6      | 8     |

Note that unlike our two previous categories, similarity on economic indicators may not be symmetric. For example, a country with a median age of 30 might be equally different from a country with a median age of 19 as to a country with a median age of 41. However, a country that is 50-percent electrified might be more different from a country that is 20-percent electrified than with a country that is 80-percent electrified (due to diminishing marginal utility and productivity). In these cases, the log difference might be a better measure of similarity and this is the reason we log-transformed the data when indicators are quantifiable.
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