

Introduction:

The Art of Engineering Prosperity in Unlikely Places

Anyone who visits the township of Diepsloot, northeast of Johannesburg, South Africa, is immediately struck by startling images of poverty and dignity, and by conflicting emotions. Amid the well-known, headline-grabbing stories of despair that provoke anger and sadness—street fights, rapes, hijackings, armed robberies, mob justice—there are also puzzling facts that, in contrast, incite joy and hope. The poor people who live in Diepsloot are among the hardest working and most entrepreneurial in the world. There are shops everywhere, generally run by illiterate but savvy women and young people whose energy and faith in their own agency redefine entrepreneurship. In a place with no electricity, no running water, and little police presence, they wake up every day at dawn and work hard all day, fighting adversity in all forms, including crime and the high probability of being randomly harassed by a corrupt tax official. Because they have settled on public land without authorization, have invested their meager savings or loans obtained from friends and family in their business ventures, and have no access to administrative protection or legal recourse, they are vulnerable to violence and injustice. And yet they enthusiastically believe in their ability to create value and prosperity and to control their own destiny.

WHY SO MANY BEAUTY SALONS IN A TOWNSHIP?

Perhaps most surprising about Diepsloot's effervescent entrepreneurship is the high concentration of barbershops and beauty salons. This is no Hollywood, Paris, or Milan where one would expect promoters of non-tradable services to focus so much on beauty. Yet in almost every corner of this low-income neighborhood, there is a hair, makeup, and skin care

shop with workers and customers focusing on the arts of elegance and the aesthetics of the body. As one watches them devote their energy and imagination to such matters, in the middle of one of the poorest neighborhoods in this most unequal society, many thoughts come to mind—beyond that it provides further evidence of the resilience of the human spirit. One can choose to see in such activities evidence of the dark nihilism described by Nobel Prize–winning novelist V. S. Naipaul. In many of his travel books he laments the deplorable fate of the African continent and often mocks the “strange” set of priorities and the belief systems of the people there. “Africa has no future,” he once said; “Africa [is] drowning in the fecundity of its people” (Naipaul 2010). In addition to being factually false, such a cynical view misses the true significance of the ethical quest that underlies the entrepreneurial drive of the people in places like Diepsloot.

A more philosophical explanation of the burgeoning of barbershops and beauty salons there—and for that matter in almost all poor neighborhoods in the developing world—would be the following: poor people, just like everyone else, have high ideals for their actions and behavior, such as requiring that their decisions conform not only to the economic utilitarianism of survival (income and employment) but also to moral standards of self-love and self-respect, such as being “clean,” “good-looking,” “elegant,” “free from contempt,” or “desired.” On the basis of these ideals, they do not let themselves be defined solely by the hardship of their socioeconomic conditions. They pursue excellence in the reaffirmation of their dignity even in the most difficult situations. True, South Africa’s particular political history and the many subtle ways people in Diepsloot are overcoming the hideous legacy of apartheid may also be valid explanations. But beyond the hysteresis of humiliation, the quest for beauty and self-esteem is primarily evidence of the collective belief that even in such a difficult environment, there is always a sense of possibility.¹ As Martin Luther King, Jr., famously observed, “Only in the darkness can you see the stars.”

A third and also plausible explanation for the high prevalence of micro enterprises specializing in beauty in as unlikely a place as Diepsloot is simply the hypothesis that the risk-return ratio is lower in that sector. The capital needed to start a business in the beauty industry is lower than in other industries, and the demand for such services is fairly stable, if not growing. Whatever the reason for this phenomenon, the highly unusual concentration of businesses specializing in the aesthetics of the body in South African

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townships is much more than a metaphor: it reflects the intense dynamism of entrepreneurship on a continent still considered poor and doomed to perpetuate its past mistakes.

Economic development, which started with the Industrial Revolution, is a process of continuous improvement in labor productivity through industrial and technological upgrading. It is fueled by entrepreneurship and facilitated by an enabling government that provides appropriate infrastructure and institutions and encourages learning and knowledge sharing (Lin 2012a, 2012b; Stiglitz and Greenwald 2014). An important part of the process is the willingness and ability of entrepreneurs to take risks and create businesses that generate income, employment, social cohesion, and a collective sense of self-worth and common purpose. But this process can be sustainable only if state resources complement the efforts of individuals and private firms to overcome externalities and solve the coordination problems that often underlie the constraints in finance, infrastructure, employee skills, and the regulatory environment. No single entrepreneur or private firm can credibly overcome an infrastructure gap, the lack of employee skills, or imperfections in the regulatory environment required for reducing transaction costs in new industries. And no country in the world has the administrative and financial resources to blindly build all the airports, roads, railways, and other sector-specific infrastructure that entrepreneurs need, or to randomly train the workforce that industries require to take off and be sustainable. What is needed is selectivity, identification, and targeting of industries in which an economy has a comparative advantage—that is, low factor costs of production compared with producing similar goods or services in other countries.

The history of successful economic development includes only a handful of countries that have supported the natural human drive for entrepreneurship, have gone through the process of creative destruction—which stimulates structural transformation (reallocating resources from low- to high-productivity sectors)—and have constantly moved up their value-chain ladder so that their economy’s comparative advantage slowly but continuously changes as their endowment structure changes.² Conversely, the history of failed development has primarily included governments whose leaders were unable to work with the private sector and other development stakeholders to channel the government’s limited resources and capacity into building the necessary infrastructure and improving the business

environment in a way that helps private entrepreneurs reduce their transaction costs in new industries that reflect the economy's latent comparative advantage.³

High-income countries such as the United States have long taken pride in the extraordinary drive of their small entrepreneurs and the intensity of their private sectors—and rightfully so. But the economic development literature has not always shed sufficient light on the delicate but essential role of the state, which is always necessary, if not to ignite new industries, at least to help them become viable competitive segments of the economy, especially in an increasingly globalized world where cooperation and connection to networks are integral elements of success.⁴

In contrast, low-income countries—where the entrepreneurial drive is as strong as elsewhere—struggle to connect private efforts and creativity with public and government resources. These countries often fail to identify broad strategic areas in which their economies have latent comparative advantage and to use their limited resources and bureaucratic capacity to coordinate and provide necessary improvements in hard and soft infrastructure. These improvements would reduce transaction costs, help industries become self-sustaining, and create employment. Instead, the countries maintain macro- and microeconomic distortions and compound political economy problems that are the result of their bad policies and weak institutional and regulatory environment. That is precisely why they remain low-income economies in a world where infinite possibilities for shared prosperity have opened up—possibilities spurred by changing patterns of global growth, redistribution of roles in the production of goods and services, a generally rising tide of trade, accumulation of human capital and talent in many places, and changing dynamics of migration and capital flows. That is a pity. In fact, in addition to failing to help the development of latent comparative advantage industries, most developing countries implemented structural adjustment policies advocated by proponents of the Washington Consensus: they attempted to eliminate all distortions without realizing that many of them came from second-best institutional arrangements. Those arrangements provided protections to firms in priority sectors of the previous import-substitution strategy. Without protections, those firms would not have been viable. But if the distortions were eliminated abruptly, many nonviable firms in priority sectors would have collapsed, causing a contraction of gross domestic product (GDP), a surge

in unemployment, and acute social disorder. To avoid those dreadful consequences, many governments continued to subsidize the nonviable firms through other disguised, less efficient subsidies and protections (Lin and Tan 1999). Transitional and developing countries thus recorded even poorer growth performance and stability in the 1980s and 1990s than in the 1960s and 1970s (Easterly 2001).

Countries that have undergone successful transitions, such as China, Mauritius, and Vietnam, adopted a pragmatic, gradual, dual-track approach. The government continued to provide transitory subsidies to protect the old comparative-advantage-defying sector, but it liberalized and facilitated entry into the new comparative-advantage-following sectors. Their overall business environment and infrastructure have remained poor, but their governments played an enabling role in creating increasingly large enclaves favorable for the development of industries with latent comparative advantages.

There are many win-win opportunities out there for all countries, regardless of their income and current conditions. There is room for higher rates of inclusive growth, including in countries with very poor business and governance environments. The beauty shop owners and other micro entrepreneurs of Diepsloot could thrive and prosper if the government were more deliberate in designing and implementing a strategy that identifies sectors with strong competitive potential and facilitates their connection with global trade networks and value chains.

The challenge of economic development is not just to ignite high growth rates but also to maintain development without excessive protection and unsustainable subsidies (Hausmann, Pritchett, and Rodrik 2005) and to ensure that the broadest segments of the population benefit from wealth creation. Distortions most likely will continue to exist, as they are necessary to avoid the collapse of old sectors. The new sectors, consistent with the country's latent comparative advantage, require the government's facilitation to reduce transaction costs by improving hard and soft infrastructure so that businesses can become competitive and prosper in domestic and global markets. The government may also provide some incentives to the first movers in the new industries to compensate for the externalities they generate. It can do this by providing tax holidays without distorting prices or giving monopolies.

This book confronts one of the most common misconceptions of economic development theories: the misguided notions that economic

prosperity can occur only in places with an excellent business environment and that growth is the result of painful and politically difficult reforms. It also sheds light on the ways economic transformation can be engineered even in countries with a suboptimal institutional environment and weak overall physical and human capital. Building on *New Structural Economics*, its growth identification and facilitation framework operationalization tool, and other works we have written in recent years, it makes the case against the false economics of preconditions (Chandra, Lin, and Wang 2013; Lin 2012a, b, c; Monga 2013a, b; Lin and Monga 2012, 2013, 2014).

This book argues that it is possible for a low-income country (which by definition must have poor infrastructure and a weak institutional environment) to develop industries in which it has latent comparative advantage—provided that the government plays an enabling role by using its limited resources and implementation capacity strategically to create a localized good business environment in industrial parks or zones that facilitates the entry and growth of those industries. The country will then have low factor costs of production in such industries, and the industrial parks or zones will offer circumscribed environments with adequate infrastructure and institutions to reduce transaction costs. As a result, even though the overall business environment remains poor, the production costs (factor costs and transaction costs) for the targeted industries can be competitive internationally. This can allow the economy to attract foreign investment, likely by active investment promotion through government managerial expertise. The economy can also generate the backward and forward linkages necessary for knowledge and learning externalities and sustained success. This is the secret formula for jump-starting dynamic growth in a poor country.

In a nutshell, this book draws lessons from economic history, economic theory, and economic analysis to highlight the often forgotten fact that economic development always occurs in places where almost every one of the preconditions for success is missing or suboptimal. From that observation, the book offers a pragmatic and realistic road map to generating shared prosperity anywhere in the developing world. It underscores the facilitating role of an enabling state, sheds light on the most effective patterns of public-private partnerships, and stresses the need for economists and policy makers to stay away from ideological postures and the legacy of distortions and ill-advised development theories (old structuralism and market fundamentalism).

This introduction sets the stage for the book by presenting stories of economic miracles from the most unlikely places and different country contexts and by linking them to the broader narrative of economic development as it has occurred around the world since the Industrial Revolution.

PERFORMING ECONOMIC MIRACLES IN THE DESERT

In Cecil B. DeMille's classic film *The Ten Commandments* (1956) on the biblical story of the Exodus, widely considered by critics to be a cinematic masterpiece, there is a defining scene in which Moses is expelled from Egypt, where he had tried to free the Hebrew slaves from bondage. The pharaoh Rameses, who considers death to be too easy a punishment for his enemies, condemns Moses to "suffer by living" and banishes him from the kingdom where they were raised as brothers. When sending him off to the Sinai Desert for a slower, more painful, and certain death, Rameses says sarcastically: "Here is your kingdom, with the scorpion, the cobra, and the lizard for subjects. Free them, if you will. Leave the Hebrews to me!" Moses vanishes slowly over the horizon, armed with only a symbolic scepter given to him as an emblem of his insignificant authority in the wilderness. Yet, as the story goes, Moses is able not only to overcome the worst possible forms of adversity in the desert but also to free his people.

Yes, this is a biblical story. Still, it is impossible even for a nonbeliever to travel in Israel some two thousand years later and not feel the intrinsic magic of the place known as the Holy Land. Nowhere is that feeling more overwhelming than in the Negev Desert, where the human spirit and ingenuity have conquered this "vast expanse of moonscape rock and sand that has been a desolate hothouse since pre-history" (Auerbach 1987). This is the lowest point on Earth, 1,200 feet below sea level, with an average of 355 sunny days and barely an inch of rain each year, and where daytime temperatures often exceed 120°F and nights can fall below freezing, yet agricultural production and exports have increased dramatically over the decades. The land long considered uninhabitable is now home to nearly one million people and hundreds of thriving agricultural settlements. Melons, tomatoes, eggplant, peppers, dates, zucchini, and avocados from the desert are shipped to the markets of Europe weeks or months before local harvests. Some farmers harvest crops three or four times a year, growing large

quantities of food per acre—four to six times what a farmer in the United States might grow yearly (Auerbach 1987).

Many of these crops are genetically engineered and irrigated with salty water from large aquifers beneath the desert. Despite the difficult climate of this area full of rocks and dust and sparsely vegetated, agricultural production is boosting the country's economy. Cotton yields in the Negev are higher than those in California, Arizona, or Egypt; peanut yields outstrip those in U.S. states such as Georgia and West Virginia, where geography and climate offer considerable advantages. In this unimaginably inhospitable place, Israelis also decided a few decades ago to develop wineries, which are now producing millions of bottles of table wine, including for export. They have engineered spectacular economic success in a place with extreme temperatures and not very fertile soil, and where water, if available, is saline or very expensive.⁵ Labor is scarce and therefore also expensive.

Israel's remarkable success in greening the Negev has been hailed as a technological and biological breakthrough and a revolution in managing land and water resources in a poor and difficult desert environment. Israel is unique among developed economies in that its land and water resources are nearly all state owned. Another unique characteristic of Israeli agriculture is the dominance of cooperatives, known as *kibbutzim* and *moshavim*. Although the management systems are being gradually privatized, the cooperatives still account for about 80 percent of agricultural output. For several decades, government interventions through central planning of agricultural policies, allocating quotas, controlling prices, protecting against imports, and providing subsidies helped expand agricultural production and exports. Reforms are now in place to remove these policies but only gradually (OECD 2010).

Skeptics may dismiss Israel's agricultural miracle as a costly, capital-intensive fantasy that only a high-income country could afford. Few developing countries could indeed mobilize the capital, technology, and skills to achieve similar agricultural success in the desert—especially in a country where the relative share of agriculture has declined over the past two decades, with its share in total employment and domestic output falling to under 3 percent and 2 percent, respectively. But the main lessons from this story are the economic successes that can be achieved even in the most unlikely places when good policies are implemented to support and facilitate the emergence of competitive industries. Israel has become a world leader

in agricultural technology, particularly farming in arid conditions, by exploiting a latent rather than “natural” comparative advantage, one built on knowledge and technological progress and financed at high cost, with strong support from the state. Just like the people in Diepsloot, the Israelis in the Negev Desert have shown entrepreneurial skills, creativity, and resilience. But they have benefited from the strong support of an enabling state that has helped identify latent comparative advantage and removed binding constraints to facilitate the transition of agriculture and resources into dynamic manufacturing and service sectors in the economy.

CHINESE POTATOES: A PARADOXICAL STORY

Despite being the fourth most important world crop, surpassed only by wheat, rice, and maize, the potato has never been the fanciest product in human food systems. In its more than five centuries of history, it has been adopted and adapted as a highland subsistence crop on all continents and has become an important dietary staple. Yet its reputation remains as a popular if not second-class product, perhaps because it was originally an “antifamine food.” According to Ellen Messer (2000, 187), it “has been credited with fueling the Industrial Revolution in eighteenth-century Europe but blamed for the mid-nineteenth-century Irish famine. . . . [It] also became a central and distinctive element of European regional, and then national, cuisines.” With the globalization of diet and taste that gradually occurred after World War II, multinational companies such as McDonald’s developed various forms of standardized, industrially produced potato fries, chips, and other frozen and processed convenience foods based on potatoes, which opened new markets.

When Chinese authorities identified potatoes in the early 1990s as a potential income source to be encouraged, few people even in China thought it was a good idea. Even in places such as Anding County in Gansu Province, where the crop had long been cultivated, it was seen as a secondary crop with a larger market risk than, for example, wheat, for which the government had guaranteed purchasing prices to farmers. Moreover, in the aftermath of rural reform in the 1980s, individual farmers had reclaimed land-use rights and could make their own production decisions. The state could not force them to switch their cropping patterns away from wheat to potatoes.

To persuade farmers that the potato was consistent with the region's comparative advantage and offered excellent income perspective, local officials first mobilized village cadres to experiment with large-scale potato production on their land. Although the farm gate price was rather low, the first potato adopters saw large financial gains because the higher potato yields largely offset the lower price relative to wheat (Zhang and Hu 2011). The yield was good: even at a lower price per kilogram, merely switching production from wheat to potatoes would double the total gross agricultural income. In addition to the higher financial reward of planting potatoes, many farmers could afford to buy high-quality seed potatoes, thanks to funding from the government. Anding County's apparently hostile natural environment still suited potato cultivation, and the dry climate reduced the need for pesticides. Land quality could be improved through irrigation.

The increase in potato production attracted many traders eager to take advantage of poor farmers but who knew nothing about price information in urban wholesale markets—most had never even traveled to big cities where their crops' prices were determined. There were too many middlemen—agents, outside traders, wholesalers, retailers—between farmers and consumers, and asymmetric information allowed them to capture most of the profits, which resulted in some farmers reverting back to wheat production in the early 2000s.

An analysis of the county government's supply chain revealed that lack of market information and weak collective-bargaining power among farmers were the main reasons for their low share of income from potatoes. The county government helped establish a farmers' association to train local farmers who could also become traders. Even farmers with minimal education were given a month of marketing training at the School of Economics and Management at Lanzhou University, which allowed them eventually to increase their bargaining power in the industry. When farmers received higher prices for their output, they produced more potatoes. The rapid increase in market share of potatoes allowed the potato trade association to build wholesale markets financed through a public-private partnership in Anding County, which helped obtain pricing information in a much cheaper, timelier, and more accurate way than collecting the information from wholesale markets all over China. Taking into consideration potato production's seasonal nature, the authorities worked with farmers to help

them develop new and better product varieties and offered subsidies to build storage facilities and to stimulate the creation of a potato-processing industry. Working with banks to secure loans for investors, the local government supported the processing industry's development, which created value addition, helped absorb the low-quality potatoes left over from the consumer market, and provided a floor price for those low-quality potatoes. This brought additional income to farmers and generated tax revenues. The support allowed farmers to store the potatoes a little longer, smooth out supply during the year, and sell their products at a good price all year long.

In sum, sensible industrial policy by the local government led to a remarkable transformation of what used to be one of the poorest regions in China. It has now become China's potato capital. Potatoes account for more than 60 percent of cropland in the county, and more than 30 percent of the rural population is involved in activities related to potato production, marketing, and processing. In addition, 60 percent of farmers' income comes from potato production. When potatoes were first identified as an important potential income and employment source in the region, many experts had shown disdain for what they thought would simply be another failed, state-led industrial policy. They stressed China's poor business environment, the skills shortage, and the geographical site, which seemed unsuited for potato production. As Xiaobo Zhang and Dinghuan Hu (2011, 5) note, "The harsh natural environment in Anding County is comparable to, if not worse than, many sub-Saharan African countries. Yet both land and labor productivity in Anding County have improved dramatically over the past three decades. Thus, the successful agricultural transformation of Anding County can provide some useful lessons for other countries at similar stages of development."

Again, such a successful story can be seen as purely anecdotal, and skeptics would dismiss it as another epic tale that only China could pull off because it would be too complicated for the average poor country with (presumably) poor organizational capabilities to handle. That would be the wrong conclusion to draw. In fact, Chinese authorities did nothing extraordinary in building the potato cluster—except perhaps to follow commonsense principles and lessons from economic analysis. Just like Israelis in the Negev Desert, they worked with farmers and investors to pick an industry that was consistent with the economy's latent comparative advantage. And they designed and implemented a simple policy package that

could help remove constraints on production and sales and quickly yield widely shared results. To facilitate the cluster's establishment, they studied the competitiveness of the industry through value-chain analysis, identified the main bottlenecks, and provided incentives to investors (land at a discounted price to build factory buildings and localized infrastructure, such as electricity and water supply). The results have been spectacular for all stakeholders.

THE MALIAN MANGO'S PROMISING TALE

Even low-income African countries with very poor business conditions can achieve rapid success in specific industries or sectors comparable to that of high- and middle-income countries such as Israel or China. One of Africa's recent economic success stories, chronicled by Punam Chuhan-Pole and Mwanka Angwafo (2011), is that of Mali's mango exports. A single number sheds light on this most unusual case story: between 1996 and 2006 mango exports from that poor Sahelian, landlocked country into the European Union rose by 600 percent, and in 2014 they reached nearly thirty-eight million tons, allowing millions of farmers to increase their incomes and improve their livelihoods. It all started in the early 1990s at a time when the country's business environment indicators were quite weak—even in 2014 Mali ranked very low on the World Bank's Doing Business indicators, 155th out of 189 economies in the world.

Value added in agriculture was 46 percent of GDP in 1990, and the sector employed about 80 percent of 1990's labor force. But the country lacked most of the basic infrastructure required to open many productive rural areas to trade's benefits. Only 11 percent of the country's road network was paved (25 percent in 2011). There were only thirteen fixed-line and mobile telephone subscribers per 100 people at the peak of mango exports to the European Union in 2006, lower than that year's average for low-income countries (seventeen per 100 people). Less than 10 percent of firms had a line of credit. Governance indicators also were poor, at least as measured by the most commonly used indices: in 1996, for example, Mali scored only a meager 9.3 for government effectiveness on the World Governance indicators (WGI) in percentile ranks, which run from 0 to 100, with higher values reflecting better outcomes. Most of these business and governance indicators remain poor even today.

Still, Malian authorities decided to refocus their development strategy on their country's comparative advantage. Considering the good geographical and weather conditions prevailing in the southern part of the country, they selected labor-intensive agriculture as a sector with strong growth potential. Several horticultural crops were considered as possible targets for economic diversification efforts, including cashews, tomatoes, shallots, and mangoes. Mangoes became a prime candidate both because of the excellent agrilimatic conditions for growing them in the southern regions of Bougouni and Sikasso and because of the fast-growing demand for them in European markets (Sangho, Labaste, and Ravry 2011). Further, the private sector had already identified mangoes as a competitive product, and smallholder farmers throughout the country relied heavily on them as an important income source.

But despite the high quality of Mali's fresh fruit and vegetables, the poor state of infrastructure, the high cost of air freight, and the failure of the state to provide research and extension services and to help build adequate storage facilities were severely limiting marketing and exportation. As a result, many of Mali's mangoes were either lost because they could not be conserved or purchased and processed for export by operators based in Côte d'Ivoire, thus depriving the country of opportunities for value addition.

In 1992 the government prepared a national rural development strategy, the *Schéma directeur du développement rural*, emphasizing commercial agriculture, export promotion, and value addition, and began directing resources toward those ends. With assistance from the donor community (notably the World Bank and the U.S. Agency for International Development), the government also established an agricultural trading and processing pilot project in 1996, the *Projet d'appui à la valorisation et à la commercialisation des produits agricoles* (PAVCOPA), which sought to promote agribusiness and exports. It allowed stakeholders to find effective ways to get the product to market, while innovations in transport and logistics systems allowed farmers and exporters to achieve economies of scale.

The state also played its facilitating role by helping with market research, analyzing value-chain costs, benchmarking, and assessing industry constraints. It provided technical assistance and training in the control of plant diseases. These policy actions led to a virtuous circle of positive externalities. There was clear improvement in the average quality of fruit exported from Mali—sea container rejections due to fruit flies, for example, dropped

considerably. Backward linkages at the production level also emerged as relationships between exporters and farmers became stronger and based on win-win business deals.⁶ Mali was also able to get a foothold in the fair trade niche market.

The initial takeoff in the growth of mango exports has led to a transformation of the subsector and stimulated private-sector interest. It has also provided further evidence that successful economic stories can occur even in the most unlikely places when the government and the private sector work closely to identify the most promising competitive industries—those consistent with the economy’s comparative advantage—and to design a manageable and targeted reform program for removing the most binding constraints to their development. Much remains to be done to ensure long-term sustainability of the vibrant mango industry in Mali and to make it a strong pillar for the country’s agribusiness strategy (building and retaining capacity through skills and workforce development programs, strengthening the necessary infrastructure and logistics, implementing a realistic industrial and technological upgrading strategy, connecting better to international value chains to improve business and learning practices, and ensuring stable access to finance). But the mango industry’s emergence in a country among the less well prepared for international business success confirms the effectiveness of development programs based on latent comparative advantage.

BEYOND ANECDOTAL EVIDENCE: ECONOMIC DEVELOPMENT’S KNOWN AND UNKNOWN

In 2002 U.S. secretary of defense Donald Rumsfeld, preparing to wage war on Iraq, was asked at a press conference about the lack of a clear link between Saddam Hussein’s regime and terrorist organizations. In his usual feisty style he responded: “As we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don’t know we don’t know.”⁷ His comments, which instantly became part of the global geopolitical lexicon, were reminiscent of Confucius’s well-known prescription for wisdom: “To know what you know and what you do not know, that is true knowledge.”

The three economic success stories discussed above obviously do not provide a strong enough basis to derive complete knowledge about

economic development. They could just offer anecdotal evidence and partial truths, perhaps useful as peculiar historical narratives but not sufficiently comprehensive and legitimate for building rigorous economic theory.⁸ When approaching issues of causality and the search for the determinants of complex social phenomena, one should always be aware of omitted variables' existence, "white noise processes" (random processes of random variables that are uncorrelated), the many limitations imposed on theoretical reasoning by the "knowns," the "unknowns," and the mysterious patterns of interaction between them. It was Rumsfeld again who, in response to the question of why the U.S. Army could not find weapons of mass destruction in Iraq after overthrowing the Saddam Hussein regime and taking control of the country, said: "Absence of evidence is not evidence of absence"—another statement with which economists and econometricians would agree.

Such awareness of the difficulties surrounding the understanding and formulation of causal inference in economics and the daunting challenges of elaborating theories of development that are both intellectually rigorous and useful (yielding clear, positive results) to policy makers in individual countries may explain the reluctance of some of the most influential minds in the profession to offer policy prescriptions. After studying in depth the thirteen economies with very different forms of governance that managed to grow at more than 7 percent for periods of more than twenty-five years after World War II, the Growth Commission (led by Nobel laureate Michael Spence) identified a series of stylized facts associated with sustained and inclusive growth: openness to the global economy, macroeconomic stability, high saving and investment rates, market allocation of resources, and good leadership and governance.

But the commission was quick to conclude:

We do not know the sufficient conditions for growth. We can characterize the successful economies of the postwar period, but we cannot name with certainty the factors that sealed their success, or the factors they could have succeeded without. It would be preferable if it were otherwise. Nonetheless, the commissioners have a keen sense of the policies that probably matter—the policies that will make a material difference to a country's chances of sustaining high growth, even if they do not provide a rock-solid guarantee. Just as we cannot

say this list is sufficient, we cannot say for sure that all the ingredients are necessary. . . . A list of ingredients is not a recipe, and our list does not constitute a growth strategy. (Commission on Growth and Development 2008, 33)

Robert Solow, another Nobel laureate, widely considered the father of modern growth theory, is as circumspect when discussing the puzzling issues of economic development. When asked why many great minds in economics too often avoid the challenge of elaborating economic development theories, he explains that the subject matter is just too complicated to be taken lightly. He adds that his own work attempts to account for the main features of U.S. economic growth, not to provide an economic development theory. One can only admire Spence's and Solow's humility. But as Robert Lucas—yet another Nobel laureate—famously observed, the search for economic development recipes is of crucial importance. “Is there some action a government of India could take that would lead the Indian economy to grow like Indonesia's or Egypt's?” Lucas wondered. “If so, *what*, exactly? If not, what is it about the ‘nature of India’ that makes it so? The consequences for human welfare involved in questions like these are simply staggering: once one starts to think about them, it is hard to think about anything else” (Lucas 1988, 5; italics in original).

This book takes up the Lucas challenge but takes a route to the quest of knowledge that differs from conventional approaches. Starting from the observation from historical data that the entire world was poor until about the Industrial Revolution (Maddison 2001), the book seeks to highlight lessons in economic development from other countries' experiences. In fact, looking back to the unexpected economic successes in Great Britain, the United States, Japan, and elsewhere during or after the Industrial Revolution and throughout the twentieth century, one can piece together again a broad picture and knowledge of economic development, which always takes place in suboptimal environments—not after a long list of structural reforms is implemented. Yet the dominant discourse still sets the linear, teleological path to economic progress, which poor countries can implement only with difficulties and with no guarantee that they will yield good results.

Since Plato's *Theaetetus*, philosophers have been concerned about defining precisely what knowledge is useful and how to acquire it. Their general

formula that “knowledge is justified true belief,” which is taken to mean “believing what is true and having sufficient reasons for it,” is of little practical use to economists and policy makers in the development business. Many researchers have devoted themselves to elaborating various theories by which, they argue, all analyses of economic and social problems must justify themselves if they are to claim rigor, coherence, and validity.

True, no consideration of economic development strategies can take place outside an at least implicit theory that underlies it. As Murray Krieger (1976, 7) reminds us, “Our choice is not between having a theory or not having one; for have one (or two or three or more incompatible ones) we must. Our choice is rather between having an awareness of those theoretical issues which our criticism inevitably raises and going along without such an awareness.” But there is always a limit beyond which the drive to theorize brings fewer and fewer knowledge benefits and more and more dangers of distraction.⁹

The problems posed by theory’s hegemony have been well recognized in economics (Sen 1977). They are even more acute when one realizes that “theory and assumptions are synonyms” and that “other synonyms of assumption are hypothesis, premise, and suppositions” (Manski 2013, 11). But in attempting to move in the opposite direction, researchers may have gone too far. The surge in empiricism—often derived from John Locke’s idea that one gains any true knowledge mainly through experience and now reflected in the wide reliance on randomized control trials as the dominant tool of analysis in development studies—has also led to an almost religious belief in the intrinsic value of number games. Yet these so-called evidence-based methods, often postmortem evaluations of projects whose lessons are not transferable from one area to another, also fail to inform policy choices because they do not really enhance the ability to predict whether government programs will be effective (Cartwright and Hardie 2012). They often lead to misleading or useless certainties.

In this book, whose theoretical foundations we explored in previous publications (Lin 2012a, b, c; Lin and Monga 2013; Monga 2013b), we opt for a methodological approach that draws lessons and insights from economic history and theory and uses empirics from economic analysis and policy practice. It starts with the observation that in an increasingly globalized world economy in which technological development allows the use of factors of production in locations that maximize returns and utility,

countries gain mutually by trading with each other—if their strategies focus on revealed and latent comparative advantage, determined by their endowment structure. By following carefully selected lead countries, late-comers can emulate the leader-follower, flying-geese pattern that has well served economies catching up since the eighteenth century.

These ideas—which build on insights articulated by David Ricardo (1817), Alexander Gerschenkron (1962), K. Akamatsu (1962), and others—embody the new structural economics approach. They shed light on how structural transformation occurs in environments with suboptimal social, economic, and institutional conditions. The prospects for sustained and inclusive growth are even greater for low-income economies that enjoy the benefits of backwardness. Moreover, the economic success and eventual “graduation” from low-skilled manufacturing jobs of large middle-income economies such as China, Indonesia, Brazil, and Turkey to higher-wage industries opens unprecedented opportunities for lower-income countries. This book advocates implementing viable strategies to capture this new opportunity for industrialization, which can enable low-income economies to set forth on a dynamic path of structural change and lead to poverty reduction and prosperity.

Chapters 1–4 of this book challenge the conventional thinking on development and the false economics of preconditions. They argue that the traditional approaches to the development problem—focusing the diagnostics on the many constraints and obstacles to growth such as governance or lack of human capital or the infrastructure deficit—are misguided. They also argue that the current dominant discourse in economic development, which still sets the linear teleological path for developing countries, makes policy making there difficult, if not impossible, and subjects the outcomes to randomness and chance. Conceiving sustained economic growth as the result of numerous structural reforms to improve “governance” and the business environment in poor countries is historically and conceptually unrealistic. The reason? Such approaches use what high-income countries have or are doing relatively well as references to determine what a developing country lacks or cannot do well. They then advise the developing country to obtain what the high-income countries have or to do as the high-income countries are doing. Such approaches often fail to take into account the different preconditions of development between developing countries and high-income countries.

Chapters 5–7 lay out concrete steps for achieving high growth even in poor institutional and business environments by focusing on what a poor country could do well based on what it has. Almost all low-income economies can achieve high and inclusive growth if economists and policy makers reject the determinism of preconditions and instead facilitate the development of industries in which the country has latent comparative advantage—and if the enabling government uses its limited resources and implementation capacity strategically to create a localized good business environment in industrial parks or zones. The main ingredients of a winning strategy? Selecting industries with competitive potential and targeting reforms that are least disruptive and yield the highest payoffs.