East vs. West

East vs. West:

Exploring International Development

By

Hugh Dang, Brad Gilmour and Jennifer Ma

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WORDS FROM EXPERTS

It is a source of great satisfaction for me to see the results of the research efforts of Hugh Deng and his team being made available to a larger audience through this volume. As an official in Canada's federal department of agriculture – Agriculture and Agri-Food Canada – for a significant number of years, I had the pleasure of seeing Hugh first join the department and subsequently immerse himself in the examination of increasingly important issues arising in agricultural economics, development and policy. Through his ever-widening networks he has been able to draw on and be guided by experts in his areas of interest, whether they are colleagues next door from his office or scholars in research institutions around the world. His focus on the People's Republic of China has remained timely from his early studies and he has complemented this in useful ways by including other countries in the region and also farther afield in his analysis. Hugh's examination of biotech policy, especially in agriculture and food, in a large number of jurisdictions will be seen by many as a most useful contribution to our understanding of the issues affecting public and individual decision making.

—Lars Brink

Hugh Deng and Jennifer Ma, together with their colleagues and collaborators, have spent almost a decade unravelling the complexities and contradictions of biotech governance in several leading economies. In an area where facts were not always easy to come by and misinformation and misapprehension have been ubiquitous, Deng and Ma have made noteworthy contributions in sorting the facts from the fiction. Their efforts have helped us to better navigate our path in this promising new area of innovation and development. Through this volume, Deng and Ma hope to take us a step or two further. Building on their previous efforts and those of their colleagues, they hope to identify where the footing (and our understanding) is sufficient to construct evidence-based foundations and, optimistically, a bridge across the river … such that the treacherous rapids are much less likely to sweep away our efforts and shared progress.

—Brad Gilmour

I am happy to provide my thoughts on Hugh Deng's latest work on international agricultural and development policy. Over the past years, Hugh and I have collaborated and successfully completed a number of work assignments on international agri-biotech policy. His research on agri-biotech policy, particularly focusing on key Asian economies, including China and India, has provided valuable policy insights and better understanding of emerging trends in the global agri-biotech industry. Hugh has expanded his work into other important global agri-biotech players and explored related-policy concerns and issues. I believe that Hugh's contribution to this new book will help minding the gaps in knowledge of international agricultural and development policy, and benefit many researchers work in these areas.

—Sudarma Samarajeewa

PREFACE

It is a source of great satisfaction for me to see the results of the research efforts of Hugh Deng and his team being made available to a larger audience through this volume. As an official in Canada's federal department of agriculture – Agriculture and Agri-Food Canada – for a significant number of years, I had the pleasure of seeing Hugh Deng first join the department and subsequently immerse himself in the examination of increasingly important issues arising in agricultural economics, development and policy. Through his ever-widening networks he has been able to draw on and be guided by experts in his areas of interest, whether they are colleagues next door from his office or scholars in research institutions around the world. His focus on the People's Republic of China ("China") has remained timely from his early studies and he has complemented this in useful ways by including other countries in the region and also farther afield in his analysis. Hugh Deng's examination of biotechnology policy, especially in agriculture and food, in a large number of jurisdictions will be seen by many as a most useful contribution to our understanding of the issues affecting public and individual decision making.

WTO rules

Having been asked for this volume to say a few words about my own perspective on agricultural policy in China, I do so through the lens of the domestic support provisions of the Agreement on Agriculture of the World Trade Organization (WTO). These provisions apply to China since its accession as a member of the WTO in 2001. Domestic support is support provided through domestic policy measures, as distinct from border policy measures. In simple terms these provisions allow unlimited amounts of domestic support in favour of agricultural producers, although domestic support under some types of policies is subject to certain limits.

The support that is exempt from limits includes government expenditures on general services for agriculture or the rural community. Defined in more detail in the Agreement, such expenditures relate to research, pest and disease control, training services, extension and advisory services, inspection services, marketing and promotion services, and infrastructural services, among others. Some expenditures related to accumulating and holding certain food stocks and to providing domestic food aid to sections of the population in need are also exempt from limits. Many kinds of direct payments to agricultural producers are exempt from limits if they meet the requirements and criteria specified in the Agreement. The various criteria are identified under such headings as decoupled income support, government financial participation in income insurance and safety net programs, payments for relief from natural disasters, payments under environmental programs, payments under regional assistance programs, and several kinds of structural adjustment assistance. Producer payments under production-limiting programs are also exempt from limits if they meet specified criteria.

The non-exempt support is calculated in certain ways prescribed in the Agreement. An Aggregate Measurement of Support (AMS) is calculated for each basic agricultural product whose producers enjoy non-exempt support (product-specific AMSs). An AMS is also calculated for non-exempt support provided in favour of agricultural producers in general (non-product-specific AMS). The non-exempt support that enters the AMSs includes, for example, direct payments that do not meet the exemption criteria, as well as any other subsidy that is not exempted. It also includes price support, measured under the rules of the Agreement if the government sets an administered price, such as a minimum support price.

China's farm support

China's limit on each product's AMS is 8.5 percent of the product's value of production in the year when support is measured. The limit on the non-product-specific AMS is 8.5 percent of the value of total agricultural production in the relevant year. Thus, the limits are not fixed: they vary over time in proportion to the variations (most often increases) in the nominal values of production.

Like all members of the WTO, China calculates its support and reports it to the WTO Committee on Agriculture, often with a delay of some years. In 2018 China reported that it had exceeded it limits on AMSs for corn in 2013-16, for rapeseed in 2011-13, for sugar in 2012-13, for cotton in 2011-16, and for soybeans in 2014-16. The excesses arose mainly from price support up through 2014 and then from non-exempt payments in 2015 and 2016. In other words, China shifted much of its farm support from administered pricing to producer payments in these years. In the case of corn China reported a shift from price support to exempt payments under production-limiting programs. It is the first time this kind of exemption is claimed by a member that also claims developing country status.

Members have interpreted some of the rules of the Agreement in different ways. China reported AMSs, including price support and input subsidies, for wheat and rice in 2011-16 that were below their respective 8.5 percent limits. However, in a WTO dispute launched in 2016 the United States argued that China's AMSs for wheat and rice exceeded their limits in 2012-15. The differences had to do with interpreting the Agreement's stipulations about the proper price comparisons and the quantity of production eligible to receive the administered price. The WTO dispute settlement procedures established in February 2019 that China's AMSs for wheat and rice in 2012-15 had indeed exceeded their limits, although not to the extent claimed by the United States.

In June 2019 China and the United States reported that China would bring itself into compliance with the limits by 31 March 2020. One of the peculiarities of the domestic support rules of the Agreement is that excess support can only be challenged after it has been provided, and past excess support cannot be "undone". It will therefore be of interest to see how China and the United States approach the issue of China by 31 March 2020 implementing the recommendations and rulings that resulted from the WTO dispute settlement procedures concerning its excess support in 2012-15.

Assessment

The dispute between the United States and China on WTO domestic support, specifically on the measurement of price support, is one of only two domestic support disputes since the initiation of the Agreement in 1995. The other one also concerned the measurement of price support but in a different situation (beef in Korea). The finding of the dispute settlement procedures in the China case are thus significant for many members' interpretation of the Agreement's rules on measuring price support. In addition, some of the dispute related to a question that arose because China acceded to the WTO after 1995 and is thus not an original member. This concerned the appropriate price observations to use in the price support calculation. The outcome in this dispute may help to clarify similar questions for the other 35 members that have acceded to the WTO after 1995.

All in all, it can be seen that the WTO Agreement on Agriculture provides unlimited room for some kinds of domestic farm support and provides typically increasing room also for the support that is subject to limits. With large and increasing nominal values of production, China thus has correspondingly large and increasing limits on certain kinds of support. For example, China's value of production in 2016 was about CNY 10,000 billion (reported to the WTO Committee on Agriculture), which corresponds to some USD 1,500 billion. This generates a sum of AMS limits of USD 255 billion in 2016 (two times 8.5 percent of USD 1,500 billion). Using all of this sum of limits would require perfect policy management of product-specific and non-product-

specific AMS support, to be sure, so the sum is theoretical in nature. It nevertheless gives a sense of the room available for AMS support, in addition to the unlimited amounts of non-AMS support that can be provided.

The WTO rules on identifying and measuring the support that counts towards the limits are still the object of different interpretations, but the 2019 outcome of the dispute between the United States and China helps to clarify the measurement of price support. China is in the process of changing many of its support policies and appears to be doing so with an eye on the WTO rules for exempting some support from limit and measuring the support that is subject to limits.

Lars Brink
Independent Advisor (formerly with Agriculture and Agri-Food Canada)
July 2019

INTRODUCTION

One of Deng Xiaoping's favorite sayings was "to seek truth from facts". This approach emphasizes that those truly motivated to understand both natural and man-made phenomena should not be rigidly attached to a particular ideological perspective. People should adjust their theories and assessments based on observations regarding the world and events around them. Another saying Deng favored was to encourage progress by "crossing the river by feeling the stones". In many instances, the path is uncertain and not overly obvious, and the footing can be tenuous; a step-by-step approach is advised to confirm whether the footing is firm and to avoid being swept away with the current.

Hugh Dang and Jennifer Ma, together with their colleagues and collaborators, have spent almost a decade unraveling the complexities and contradictions of biotech-related governance in several leading economies. In an area where facts were not always easy to come by and misinformation and misapprehension have been ubiquitous, Dang and Ma have made noteworthy contributions in sorting the facts from the fiction. Their efforts have helped us to better navigate our path in this promising new area of innovation and development. Through this volume, Dang and Ma hope to take us a step or two further. Building on their previous efforts and those of their colleagues, they hope to identify where the footing (and our understanding) is sufficient to construct evidence-based foundations and, optimistically, a bridge across the river, such that the treacherous rapids are much less likely to sweep away our efforts and shared progress.

In this current effort, the authors explore how institutions, governance structures, incentives, regulatory oversight, and transparency institutions influence and can reward or hinder, shape and influence the incidence and nature of research, innovation and entrepreneurial behavior in different economies and societies. Such relationships can be of fundamental importance to growth, equity and well-being.

China's is a society and economy that is slowly evolving from a top-down, state-guided, "managerial" society to one that is more entrepreneurial and innovative in nature. This transition has transformed China since reforms first began in the late 1970s. However, innovation and entrepreneurial effort alone are not enough to ensure growth with equity. Innovation and entrepreneurship occur in all societies, while it is where and how they are applied that ultimately determines whether they contribute to a stronger, healthier economy and society. Hence, it is of considerable interest to examine how innovation and entrepreneurial efforts are influenced and shaped by governance and accountability institutions and regulatory oversight, as well as access to enabling services and resources such as the banking and financial sector.

As China's reforms have unfolded, its leaders have sometimes deliberately and sometimes inadvertently allowed jurisdictional mandates to be removed. This resulted in greater pluralism and competition within China's borders and stimulated a move toward greater efficiency and dynamism. In turn, greater competition and incentives arising from more hotly contested markets contributed to a decline in "over administration" and "over interference", particularly in sectors where there was a strong state-held or state-linked presence. Now, as China enters the fifth decade of its Reform Era, China's leaders and society at large recognize the benefits of addressing institutional and physical bottlenecks to encourage greater dynamism within markets and the economy in general. However, it is also recognized that unbridled liberalism does not always lead to superior societal outcomes in terms of growth with equity. For this reason the authors will make an effort to: 1) examine how other economies and societies have dealt with the similar challenges and how different approaches have resulted in different outcomes; 2) draw lessons from China's now substantial and growing reform experience. Such an effort can inform both China's and other emerging economies' future efforts, such that successes are augmented and lapses and shortfalls can be ameliorated or circumvented.

Influencing and Augmenting Innovation and Entrepreneurial Effort to Improve Societies' Growth with Equity Outcomes

Research, innovation and entrepreneurship take place in all societies and economies However, their nature, incidence and amplitude of effort and outcomes differ based on the institutions, incentive systems, and cultural considerations inherent to where they take place.

Some systems are top-down, quite focused, and managed and guided by fiat in areas deemed to be of the greatest importance to the economy and society. Others approaches are more pluralistic and perhaps more "organic" in nature, with researchers, innovators, and entrepreneurs acting more independently and possibly in a more competitive fashion across a wider array of areas. The financial, physical and labor resources dedicated to encouraging research, innovation and entrepreneurship can obviously be critical in determining the "where" and "what' of such efforts. However, legal consideration – like the length and breadth of patents granted, and to whom they are granted – can also play a critical role. Likewise, policy focus and the extent to which some sectors are favored or discriminated against can inadvertently influence and shape the incidence and nature of research, innovation and entrepreneurship. The nature of regulatory systems can do likewise. Perhaps some "for instances" are warranted to illustrate the ramifications of the discussion.

In India, policy biases and subsidies favoring rice and wheat were sustained for so long that plant breeders, agricultural engineers, and machinery manufacturers no longer placed much effort into the production and harvest of more nutrition rich crops like pulses and other legumes. This contributed to the steady decline in the nation's ability to produce and harvest such crops. Moreover, there are now "second generation" impacts. This is because much of the machinery used to harvest pulse crops is modified from its primary use for either wheat or rice production, harvest losses for pulses are estimated to be almost 30 percent in some states. This illustrates how misguided policies can have inadvertent adverse consequences that can be amplified and compounded across space and over time as the incentives have also impacted research and manufacturing efforts as well as primary production.

Pluralistic systems, where private and public institutions sometimes cooperate and sometimes contest with each other don't always move as quickly as systems with centralized oversight. But they are also less prone to extremes in behavior and outcomes. China's centrally-guided system is a case in point. It has had its successes as achieved economies of size, scale, agglomeration and complementarity. However, it has also inhibited and redirected private initiative, often in ways that are detrimental to well-being. An insistence on grain as the metric for production incentives in the past contributed to serious crop losses, malnutrition, and environmental degradation. Because of a focus on grain, lands more suited to grazing, pastureland, forage and tree crops were turned to the plow in many locations; damage to local ecosystems and watersheds have still not been ameliorated, with wind and water erosion and greater desertification as a result.

Environmental disasters due to human error are common in the Chinese collective history, but few can compare to the one which began in 1958. At that time, key leaders thought that sparrows ate too much grain and deemed it rational for great efforts to be made to kill sparrows. All manner of methods were used to eradicate the birds. Beating drums were used to scare the birds from landing, forcing them to fly until they died of exhaustion. Sparrow nests were torn down and sparrows were shot from the sky. The result of the campaign was to push the birds close to extinction.

After the campaign against sparrows, it was noticed that insect infestation of crop fields had soared. Sparrows had eaten insect pests such as locusts, and the locusts and other pests lost their major predator. This meant that killing sparrows was somewhat more than counter-productive. The sparrows didn't only eat grain, they also ate insects. Populations of insect pests subsequently boomed and consumed vast quantities of grain and other crops. Grain production collapsed and a massive famine began. During the next three years, many millions of people died in a famine caused by such policy errors and incentive systems that immunized China's senior decision makers from outside voices and advice.

While the above is indeed an extreme example to make a point, it underlines what can happen: a) when central agencies presume or behave as though they are omniscient and are not open to hearing a plurality of other voices, contesting ideas and / or perspectives, and b) when there is not a correspondence between power and authority to make key decisions and accountability for the outcomes arising from such decisions.

The United States system of research and innovation is arguably one of the most successful in the world. However, the United States has also evolved into an extremely litigious society. Patent laws can be critical in determining whether a product or service comes to market and what it might cost consumers to procure. The length and breadth of patent can be critical in determining whether the prerequisite research is undertaken. If the patent period is too short and too narrow in nature, prospective researchers, innovators, manufacturers, and entrepreneurs may consider the risks posed by prospective market entrants and other competitors too likely and simply forego efforts in one area and move on to another. If the patent period granted is too long and the patent too broad in nature, other prospective market entrants will be deterred and there will be less competitive incentive to keep moving innovation forward. Patent trolls are common in the United States, adding another element of risk to true innovators and entrepreneurs as they pose a real risk that benefits arising from the effort and ingenuity applied do not accrue to those making the effort but – effectively – to more predatory entities that are gaming the patent and copyright systems.

Worldwide, with a few noteworthy exceptions, almost all countries have persistently under-priced water. Many jurisdictions charge for the variable costs of extraction and conveyance but place no value on the resource itself. This tendency is exacerbated by policies which subsidize the production of primary products, especially wheat, rice and corn but also cotton, forages, and livestock production. These misaligned pricing and subsidy incentives result in greater research and efforts in the field being applied to water extraction and conveyance rather than water governance and management under conditions of scarcity.

India has more than 20 cities that are at the point of a crisis if its water management systems can't be turned around within five years. The North China Plain and the Loess Plateau are both suffering from increasing desertification and land subsidence due to water governance challenges. In the American mid-west and south-west, misaligned incentives have resulted in the application of water to achieve greater corn ethanol production and greater forage production for dairy cattle, while concurrently resulting in environmental damage in the south-west as well as shortfalls for more commercially oriented horticulture production and for urban potable water use.

As the authors undertook their task, it became more and more evident that some consideration had to be made of how decisions are made (or not) under conditions of uncertainty raising the importance of fore-sighting activity when dealing with the unforeseen.

How Institutions, Governance, Incentives, Regulatory Oversight, Transparency and Accountability Impact Innovation and Entrepreneurial Effort and, Ultimately, Societies and General Well-Being

The past couple of decades have had several events, and each altered the way in which the world does its business in its own way. Some of them could have been foreseen. Some couldn't. A collective response to these events was not always stellar. There is some evidence to suggest that one of the collective responses to these events has been for countries to become more insular and protectionist. Could our response and adjustment to these events have been less painful? Can our policy, regulatory and incentive-based tool kits robust enough for the next set of risks or sizable shocks? Do our systems have "self-correction" mechanisms built in to deal with extreme events? Would they facilitate remedial action or impinge upon it? While the specifics of future events are not known, there are some thematic areas below where reflection is useful.

- Biotechnology, bioprocesses, CRISPR (ethical, environmental, legal dimensions)

- Bioterrorism
- Climate change and carbon emissions
- Economic shifts
- Epidemics / pandemics
- Inter-linkages in the food, fuel, and fiber complex (competing / complementary use)
- Petroleum markets & alternative fuels
- Population shifts
- Potential financial crisis or recession
- Worldwide freshwater governance

The existing literature underlines the importance of establishing a correspondence between actions and consequences. When an individual, agency or enterprise does not directly bear the consequences of its decisions, there is no direct correspondence between actions taken and subsequent consequences. This is a recipe for misbehavior either by agents in the marketplace or by government institutions. The objective with any type of reform or policy initiative, therefore, should be to establish a closer correspondence between agents' actions and consequences thereof.

Wherever possible, the authors suggest embracing performance-based oversight and reward systems. For many, the word "oversight" conjures up an image of proscribed behaviors and detailed rules telling individuals and businesses what they can and can't do. Yet, instead of establishing specific prescriptions for behavior, enlightened oversight can also set goals for the outcome of that behavior. When such oversight sets a performance goal rather than prescribing the means to achieve the goal, it allows firms and individuals some choice as to how to meet the goal.

Approaches which harness rather than supplant market forces are superior to rigid bureaucratic and administrative approaches because they: a) respond better to changing circumstances and information; b) allow stakeholders to make efficient choices; c) are subject to public scrutiny; and d) are less easily captured by vested interests. While well-motivated, administrative and bureaucratic approaches tend to be more lethargic, be prone to preferential access, preclude choice in the methods for achieving objectives, and inadvertently encourage wasteful lobbying.

After reviewing applied analysis relating to past and current research, innovation and entrepreneurial experiences in several economies of interest, the authors turn their attention to China's ongoing, future-focused Belt and Road Initiative (BRI), along with its transformation and global integration. In discussing China's BRI, the authors spend some time comparing and contrasting it with other initiatives to fully delineate its strengths and weaknesses, and anticipate potential challenges prior to their emergence.

To characterize the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), also known as TPP11 or TPP-11, it becomes an aspirational agreement built on the expectation that a rules-and-principle-and-process based foundation. This encourages and attracts reciprocal trade, investment and prerequisite and complementary enabling infrastructure and logistics systems. The Regional Comprehensive Economic Partnership (RCEP) is portrayed as a pragmatic, step-wise effort to harmonize, simplify, and broaden a plethora of smaller trade agreements to achieve a greater degree of coherency that could be attractive to commercial interests. If vested interests do not become too entrenched, its step-wise approach could allow commitments to become more progressive and substantial over time.

The BRI Embraces a "Build it and They will Come" Philosophy

The China-backed BRI focuses less on shared principles and rules and more on investment in complementary and enabling transportation and logistics infrastructure with a kind of "build it and they will come (or patronize it)" philosophy.

The BRI serves as a cooperation framework that promotes increased integration through five main avenues: policy, infrastructure, trade and investment, financial and people-to-people exchanges. Of these main avenues, China's senior leaders place a high priority on infrastructure. Chinese past experience (and that of many other countries) suggests that the removal or reduction of institutional and infrastructural bottlenecks is critical to development, easing bottlenecks and impediments to growth, trade, investment and greater financial integration. To an extent, in pursuing the BRI, China is attempting to follow the path through which the United States (and other advanced nations) reduced trade costs in the 19th and 20th centuries.

Consequently, focus has been placed on building and the finance of enabling infrastructure like roads, rail, gas pipelines, oil pipelines, electricity and telecommunications connecting or shared by collaborating economies. A key emphasis is on turnkey projects like the building of major economic corridors and ports that facilitate the flows of goods, capital, technology, information and people-to-people exchange. If successful in meeting its goals, the BRI may help China with relevant countries in:

- Securing reciprocal access to resources and markets;
- Cementing relationships with its Central, South, and South-East Asian neighbors in particular;
- Overcoming adverse consequences of a prospective shift from enjoying a demographic dividend to a demographic deficit over the next decade;
- Regaining (faltering) momentum with respect to institutional and infrastructural reform;
- Partially addressing internal disparity issues.

The BRI transport corridors have the potential to substantially improve trade, foreign investment, and living conditions for citizens in its participating countries. However, maximum benefits are likely to be realised only if China and its BRI partner economies adopt deeper policy reforms that increase transparency, expand trade, improve debt sustainability, and address environmental, social, and corruption risks. For the ~ 70 BRI partner "corridor economies", related transport projects could potentially: reduce travel times along economic corridors by 12%; increase trade between 3 % and 10 %; and increase incomes by up to 3.5 %.

Some critics claim that China is using the BRI as a form of coercive "debt-trap diplomacy" to exert control over the countries that join its transnational infrastructure investment scheme. However, analysis undertaken by credible agencies like the World Bank, Bertelsmann Stiftung, Transparency International, John Hopkins University and other analytical bodies suggest that portrayals of China as some kind of international loan shark are a bit misguided. This does not, however, mean that BRI activities are without risk. While there is much potential for nations and firms to profit, risks posed by partners' governance and accountability shortfalls are also substantial.

Regarding the BRI infrastructure and finance related risks, the lack of transparency and accountability, the weakness of governance institutions and the prevalence of corruption in a number of partner economies is perhaps more worrisome than China's lending practices. For those BRI corridor economies for which detailed data is available, over one-quarter already are considered to have elevated debt levels, with low levels of transparency, public scrutiny and accountability for ruling elites.

Coordination and cooperation across borders may also be a challenge. Many BRI projects cross borders, so collaboration and coordination among all economies within a corridor is critical to success. There are different kinds of risks contained within the BRI. Certain inherent institutional biases may prove problematic, with China inadvertently creating its own trap as the BRI makes China vulnerable to partner states' growing bargaining power. Foreign investors can sometimes lose bargaining power as they invest more in a host country. Infrastructure projects – like the BRI – are especially vulnerable because they are bulky, fixed in position, and have little value if left incomplete.

Some BRI partners are already asking to renegotiate terms, now that projects are underway. In mid-April 2019, for example, Malaysia announced that a major BRI rail project, put on hold since 2018 election, would

now go ahead "after renegotiation" at a ~ 30 percent reduction in cost. In late June, Tanzania slowed work on Bagamoyo port expansion, seeking more favourable terms. Other BRI economies may follow a similar strategy of seeking write-offs and debt forgiveness. Empirical work suggests that investments in physical infrastructure are typically most effective in promoting growth when countries possess high levels of human capital. To a degree, China itself benefited from its infrastructural investments because it had invested heavily in education. With a few exceptions, however, many BRI collaborators score poorly on education indicators and possess relatively high political, economic, and default risks.

Corruption and competence can also be issues. "Back to the future" towards central guidance is problematic. The BRI is reversing long-term trends by increasing the role of the state sector, increasing one of the long-term drags on China's economy. In a recent study, the American Enterprise Institute found that private companies accounted for only 28% of the BRI investments in the first half of 2018, down from ~ 40 % for the same period of 2017. Empirical studies have shown that state-linked entities enjoying preferable treatment are often "over-administered and over-interfered" with "management and administration" ratios well above optimal levels. Recent efforts to install internal Communist Party cells into private enterprises are likely exacerbate this issue by making such companies behave more like state-held enterprises, undermining efficiency and make them less responsive to market forces.

Moreover, the BRI's massive scale, coupled with sluggish performance within China's state sector, means that its projects may need substantial support from Chinese banks. The BRI investments would then compete for funds – and foreign resources – with China's domestic private sector, which is already facing a high tax burden and the strains of the U.S. - China trade dispute. Such "crowding out" of private enterprises can hardly be beneficial.

As the BRI activities and China-U.S. trade dispute have ramped up, the enthusiasm of both domestic and foreign private firms has waned. The United States' foreign direct investment (FDI) in China has fallen off slightly over the past few years. Concurrently, Chinese FDI in the U.S. has dropped precipitously since 2016. This is worrisome: the BRI was intended to be an augmentation of China's "reform and opening-up" efforts. Instead, a simmering trade dispute, a rejuvenated state sector, and growing protectionism at home and abroad are eroding the benefits from mutual cooperation that China was initially seeking to consolidate via the BRI.

It could be a sad irony that the BRI's role as a spearhead to even greater "opening up" – because of the magnitude of the BRI venture and inherent tendencies within China's leadership and institutional structure – longer term trends toward greater dynamism and entrepreneurship could inadvertently be undermined by a reversion to "central planning syndrome" in its planning, guidance, and expansion.

Exploring International Development with a Particular Focus on East Asia

This research collection explores international development, comparing, contrasting and noting converging insights across Eastern and Western traditions and experiences. The East Asian model of development – referred to by some as state-sponsored capitalism – implies that the state plays a leading (not just enabling) role in the economy. The government invests in and guides certain sectors of the economy considered to be of strategic or catalytic importance. In turn, this activity is thought to stimulate and shape the behavior and growth of the private sector. Key aspects of the East Asian model include state control of finance, heavy state involvement (if not full control) over turnkey infrastructure investments, direct support for state-owned and state-linked enterprises in sectors deemed to be strategic, export-oriented growth in the early and middle stages of reform, and a high rate of savings.

Japan was the first East Asian society to embrace institutional and economic reforms that eventually led to the country becoming an economic powerhouse. Japan's success inspired imitators in Hong Kong, South Korea, Singapore and Chinese Taipei to explore their own pathways for economic growth. Soon thereafter, China and ASEAN began their own economic and institutional reforms, removing constraints which

constrained consumption and production choices and limited individuals, entrepreneurs, innovators, enterprises and institutions in their activities.

As a result of cumulative and sustained reforms over time, East Asia is now one of the most economically dynamic places in the world. The region is the site to some of the world's longest modern economic booms, starting from the Japanese Economic Miracle (1950–1990), Miracle on the Han River (1961–1996) in South Korea, the Taiwan Miracle in Chinese Taipei (1960–1996), concurrent developments in the entrepot economies of Singapore and Hong Kong and, of course, Mainland China's on-going "Reform and Opening Up" (1978–present). These collective experiences and the insights drawn therefrom are instructive.

For the most part, these economies and governments ignored those theories that had little substantiation or predictive value on the ground. They employed common sense and proceeded in a step-wise fashion embracing practices which worked and discarding those that did not.

Eeither Eastern nor Western economic theories of development were embraced in their entirety, nor were stylistic and all-inclusive representations (and somewhat patronizing characterizations) of the "Third World". Rather, more and more pragmatic leaders have embraced evidence-based approaches learning where and when to facilitate, enable, and when to simply get out of the way. Some key observations could be considered universal in nature. Others could be considered unique to the time, location, culture and circumstances in which nations and societies find themselves.

It is often said that Asian people place a higher value on economic growth than democratic growth. This view has certainly been expressed many times by political and economic elites in both East and West. Whether or not it is a view shared by common folk is another matter. Recent events in Indonesia and in Hong Kong might suggest that this view may not be universally shared.

In 2013, Hal Hill, a political economist from Australian National University noted that reforms come in many forms from the large to the incremental. Much of the literature focuses on the "big bang" reforms that constitute a major change in policy direction. If they prove to be durable, they come to be considered referred to as "turning points" that lead to accelerated growth and improved living standards. Often cited Asian examples include the People's Republic of China (PRC) in 1978, India in 1991, Indonesia in 1966 and again in the post-Suharto era, and Viet Nam in the late 1980s.

For other jurisdictions, such turning points may be less discernible. General policy orientation, institutional reforms, changes in the sequence and nature of decision processes have occurred in a more evolutionary and incremental fashion. Malaysia, Singapore, and Thailand are countries that have evolved in this manner.

The nature of reforms and their bureaucratic complexity also differs. Some measures are straightforward, stroke-of-the pen deregulations that range across Hill's "incremental change" through "big bang" spectrum. Examples include the decision to replace non-tariff barriers with tariffs, open an industry up to competition, alter shared ownership requirements for foreign/indigenous joint ventures, remove or simplify or harmonize regulatory requirements, and the removal of a corrupt agency from a decision chain. Some thoughts arising from the literature in both "East" and "West"

- Enabling infrastructure and services and regulations are "good" requiring governmental oversight and guidance.
- Institutional and administrative intervention in markets for goods and services throttle individual and entrepreneurial activity and distort incentives to innovate.
- Regardless of whether they come from the "Eastern" or "Western" tradition, bureaucrats, political apparatchiks, and administrators, even if they are of profound intellect and judgement, fall short in terms of making decisions about what consumers, producers, citizens and societies need, demand, or desire.

- Extracting rents or surplus from agriculture to underwrite the expansion of other sectors is a foolhardy notion within the development economics literature and one that was (regrettably) embraced in a number of societies (both East and West, and including China and Russia).
- Favors to one sector or type of enterprise diminishes incentives and responsiveness, institutional discrimination, access to banks and credit, and access to technical know-how.
- "Hurdle" systems for some hinder and distort development and actually result in actions and behaviors that are not in societies' interests.
- Favoritism breeds complacency.

China and Its Emerging and Evolving Development Model

In international studies there is a significant debate related competing "development models" and their trajectories. In both Eastern and Western traditions in the 1950s through to the 1980s, many felt that "surplus" had to be extracted from agriculture and other resource sectors in order to encourage other industrial sectors and societal evolution. Such approaches inflicted significant harm on the agri-food sector, placed considerable burdens on some of the poorest members of society, and inadvertently created micro and macro incentive systems that ran counter to both individual and societal interests. These traditional development models have now largely been discredited in China and elsewhere. An increasing volume of the literature relating to development, both in China and elsewhere, has explored what has come to be referred to as the China Development Model or the "Beijing Consensus". Some of its defining features include:

- Incremental reform (as opposed to a Big Bang approach);
- Ongoing innovation and experimentation (with correction through learning);
- Export-led growth;
- State capitalism (as opposed to Socialist planning or free market capitalism).
- Meritocratic authoritarianism (as opposed to an inclusive democratic regime).

China as an increasingly important player in the global community, it is time to assess the opportunities and challenges facing China from rural to urban areas. In this research collection, the first section is the studies on development in greater China. Chapter 1 draws on the discussion related to China's development, including Hong Kong and Chinese Taipei, as it grew as an important player in the global economy. To a considerable degree, Hong Kong's success served as an inspiration and a bit of a template for the Special Economic Zones established during the PRC's reform era. Because of elements of Chinese Taipei's shared history and culture with the PRC and the fact that Chinese Taipei began its own institutional and structural reforms roughly 15 years prior to the PRC's, its experiences, failures, and successes have also been of considerable interest to the PRC.

The Food and Agriculture Organization of the United Nations (FAO) has identified that food and agricultural systems in the Asia-Pacific region are undergoing profound changes. Along with rising per capita incomes, technological advances, urbanization and trade growth, the role of the governments in policy reforms for agricultural and agribusiness development has become significant. China's agricultural and agribusiness development has been accompanied by policy and institutional reforms. During this process, the development of a particular agribusiness, i.e. township and village enterprises (TVEs), became an amazing phenomenon in China's agricultural and rural areas.

Chapter 2 provides an overview of the policy reforms to promote the development of TVEs as a particular agribusiness in Mainland China. It is to explain why the Chinese policies on TVEs could sustain rapid growth for the national economy and peasants' income. It also tries to draw lessons for developing countries in Asia by investigating the Chinese experience relating to the development that the FAO is promoting and advocating. It is worthy to note that, after the mid-1990s, TVEs were forced to restructure substantially. With increased market integration and competition, bureaucratic discrimination against TVEs, official favoritism

for state-held enterprises, and the growing presence of both privately-held enterprises and foreign ventures, TVEs lost their competitive position. Regulatory hurdles and discrimination against both TVEs and private firms by the banking and financial sectors has hampered the growth of TVEs and small firms.

Chapter 3 contains a closer examination of the Hong Kong Special Administrative Region (HKSAR, consisting of Hong Kong Island, Kowloon Peninsula and the New Territories). The chapter provides an economic and industrial analysis with particular attention to the food and agricultural sector, including agri-biotech, along with recent policy and trade developments. As mentioned earlier, the HKSAR is of particular interest as it was an early model for subsequent reforms in China. Our examination also notes that, as one of the most densely populated areas in the world, Hong Kong relies on imports to feed its population and is a potential market for agricultural and agri-food products for countries with an agri-food trade-orientation. The information could be helpful for those who may be interested in accessing Hong Kong's potential agricultural and agri-food market.

Chapter 4 chronicles the development story and experiences of Chinese Taipei (CT). The CT has transformed itself from a recipient of U.S. aid in the 1950s and early 1960s to an aid donor and major foreign investor, with investments primarily centered in Asia. Moreover, outward private CT investment in Mainland China is estimated to total in excess of US$150 billion and official tallies suggest that CT firms have invested a comparable amount in Southeast Asia.

After breaking away from Japan after World War II, the CT embraced a long-term strategy of "developing industry through agriculture, and developing agriculture through industry". Thus, agriculture initially became the foundation for Taiwan's economic development in the first few years after the war. The CT's first step towards industrialization was land reforms, a crucial step in modernizing the economy and stimulating private entrepreneurial behavior, as it created a class of landowners with the capital and leverage to invest in future economic endeavors.

The U.S. aid was also important to stabilize post-war CT, constituting more than 30 percent of domestic investment from 1951 to 1962. These factors, together with government planning and universal education, resulted in significant advances in industry, agriculture, and living standards. The economy shifted from an agriculture-based economy (32% of GDP in 1952) to an industry-oriented economy (47% of GDP in 1986). Between 1952 and 1961, the economy grew by an average of 9.21% each year.

Once again, the transformation of the CT's economy cannot be understood without reference to the larger geopolitical framework. Although aid was cut back in the 1970s, it was crucial in the formative years, spurring industrialization and security and economic links were maintained. Uncertainty about the U.S. commitment accelerated the country's shift from subsidized import-substitution in the 1950s to export-led growth. Development of foreign trade and exports helped absorb excess labor from the decreased importance of agriculture in the economy. Like Korea, the CT moved from cheap, labor-intensive manufactures, such as textiles and toys, into an expansion of heavy industry and infrastructure in the 1970s, and then to advanced electronics in later decades. By the 1980s, the economy was becoming increasingly open and the government started to privatize government enterprises. When the PRC began its "Open Door" policy, investments in Mainland China spurred cross-strait trade, decreasing Taiwan's dependence on the United States market. From 1981–1995, the economy grew at an annual rate of 7.5%, and the service sector became the largest sector at 51.7%, surpassing the industrial sector and becoming a major source of the economy's growth. The agriculture sector now accounts for less than 2% of GDP.

Biotechnology Governance and Growth Prospects in Key Asia Economies

The second section of this collection provides an overview on the potential of biotech to play a role in meeting the world's food, feed, fiber and fuel needs for human life. Using case studies, policy developments in the key Asian countries of China, India and Japan are scrutinized to determine the extent to which they enable or

obstruct biotech's potential. Each nation has evolved its own system of governance based on the different challenges facing the society, the recognized potential of different biotech interventions, and citizens' collective perceptions regarding both the potential and the risks that biotech innovations embody. Systems that are less evidence-based appear to be more discretionary and therefore are less predictable in their outcomes. This increases the risks to prospective exporting and importing firms, driving up system costs and effectively serving as barriers to entry and to trade. It also dampens and distorts entrepreneurial and innovation incentives. The sometimes disjointed, sometimes strategic use of biotech regulations has fragmented markets and created fiefdoms, which undermine the potential of novel technologies to address the challenges facing society. Chapter 5 provides more details on this insight.

The purpose of Chapter 6 is to understand how a growing technology and institutional reforms in China could impact and potentially boost Chinese agricultural industry as well as the overall economy. It examines various economic indicators alongside Chinese agricultural and biotech policy to possible outcomes from development. The authors analyze the consumption of biotech products in Chinese markets, and the barriers encountered when attempting to capture the Chinese market. It does so by providing a comprehensive picture of the technology policy and development through a review of various resources. While reviewing the policy developments in China, this Chapter focuses on its biotech-related policy and regulations. It also reviews its governance institutions. By remarking on the policy and an institutional reform, the Chapter examines China's challenges with its bureaucratic system. A key question is precisely how to enable this promising sector. The past experience in both China and elsewhere has shown that industries, sectors, and enterprises that been overly protected and over-suckled can lose their innovative and entrepreneurial drive through a combination of complacency and administrative complexity.

Chapter 7 discusses aspects of India's agricultural development with a focus on its biotech industry and applications, including the current status, policy development and institutions. It also looks into the potential impact of India's agricultural and agri-biotech development on the international trade. In India's case, the coherency and consistency of biotech related policies and regulations poses real challenges both domestically and with trading partners. While India has a great number of highly respected researchers and practitioners with considerable insight into biotechnologies, their voices are often drowned out by less informed perspectives in practice, particularly at the level of state and sub-state administrations.

Japan remains the world's largest per capita importer of foods and feeds that have been produced using modern biotech. Annually Japan imports about 15 million metric tons of corn and 3 million metric tons of soybeans, approximately three-quarters of which are produced through biotech. The country also imports billions of dollars of processed foods that contain biotech-derived oils, sugars, yeasts, enzymes, and other ingredients. Japan is the world's largest net agri-food and seafood importer, with imports totaling $82.5 billion in 2011. For example, Canada has a share of about six per cent, including canola- and soybean-related biotech products at over 40%. Chapter 8 discusses aspects of Japan's biotech development and governance, including the current status, policy development, and decision-making processes. It also looks into its potential impact of trade on the world.

Approaches to Biotech Governance in the Western Hemisphere

In this section, the authors conduct studies in the western region by looking into the technology and innovation, which is seen as a key driver for development and human life within a global context. Managing biotech related production and trade issues, including low level presence (LLP) issue, are one of the most significant areas in terms of biotech development. According to the International Service for Acquisition of Agri-Biotech Applications (ISAAA), a record 192 million hectares of biotech crops were grown globally in 2018 in 26 countries, up from 190 million hectares in 2017, rising at an average growth rate of about 12 percent since 2000. The global area of biotech/GM crops has continued to rise since 2017, reaching 190 million hectares compared to 185 million hectares in 2016. The unprecedented 100-fold increase since 1996

makes biotech crops the fastest adopted technology in modern agricultural history. The primary objective of this study is to look into the international biotech policies and regulations and discuss the potential implications. In Chapter 9, the authors briefly discuss why there is an urgent need to look into the biotech policies. In addition to discuss some findings related to a number of North and South American countries, such as the United States, Brazil and Argentina in the western society, the authors examine the role of civil society in the biotech perceptions and policy debate.

The United States has become the largest producer of biotech crops in the world. Chapter 10 examines the United States biotech and innovation policy, regulations and governance. Starting from a brief overview of the biotech industry in the United States, the study looks into this country's biotech policy developments, regulatory framework and governance system. In terms of the governance, the study investigates the United States' food and feed safety, animal and plant inspections, and human health and environmental administration. In looking at its policy and regulations, the United States appears to calm anxieties in public and environmental health in applying for biotech products. In this Chapter, the authors find some issues need to be analyzed. These include unfair risk assessment, lack of scientific merit and social and ethical elements, which might affect biotech application. The study concludes that in general, the United States biotech and innovation regulatory policy has quite a strong track record in spite of the existence of certain regulatory flaws. In the United States, there are on the more balanced and slightly less sensationalized nature of public discourse on biotech, with an effort to use an "evidence-based" framework to sort through and discriminate between different arguments. This could be used to contrast how ill-informed lobby groups throttled the adoption of "Golden Rice", which has done considerable damage to CGIAR (formerly the Consultative Group for International Agricultural Research) efforts to address malnutrition, blindness, stunting, and mental underdevelopment.

Chapter 11 discuses biotech policy in Brazil. Biotech and innovation can significantly contribute to many areas of the food industry and other sectors. Policies, regulations and governance might promote or hinder its research and development, especially in the agri-food sector. Since the opening-up of the country to genetically modified organisms (GMOs), Brazil has become a major lead in biotech. It is now the second largest biotech plant producer in the world right after the United States. The country has several multinational seed and public sector institutions doing research towards the development of biotech. Brazil has succeeded well in both regulating and adopting biotech development. A legal framework is important, allowing the scientific assessment of the GMO risks and separating this step of risk analysis from those involving socio-economic considerations, to avoid authority conflicts and to offer GMO developers a safe and legal environment. Brazil has one bean, five soybeans, 12 cotton and 19 maize commercially approved GM varieties and about 50 million hectares of transgenic plants in 2016, being one of the world leaders in GM crops. More details have been provided in this Chapter. Brazil has also made efforts to listen to and be responsive to the concerns of existing and prospective importers, which may sometimes give them a leg up over the United States from a commercial sales perspective.

Argentina is the third largest producer of biotech crops, producing 14 per cent of the world´s total in 2016. The country´s area cultivated with biotech varieties in the fiscal year 2015/16 is 24.54 million hectares. Almost all of the soybean area has been planted with biotech seeds, while 95 per cent of the corn area and 100 per cent of the cotton area are biotech varieties. China's approval of genetically engineered events is a top priority for Argentina's foreign trade since it is one of the most important markets for Argentine agricultural products. Chapter 12 looks into Argentina's biotech policy-related issues, including the approval process and administration. It focuses on the policy issues, regulatory matters as well as the institutions for governance. The study finds that the seed royalty system continues to be a problematic issue, although Argentina's Ministry of Agriculture submitted a new Seed Law proposal to the Congress. It generally concludes that the policy and regulations in Argentina have positively supported the country's biotech research and development, industrialization and commercialization since the late 1990s.

International Policy and Development

In this section, the authors look into the international policy and development. With respect to international development and economic integration, China's entry to the World Trade Organization (WTO) has become a controversial issue. Despite some legal, political and technical factors, one can argue that China's process of entry involves a contradiction between its developed and developing status based on its high economic and trade growth and low per capita index. While China continues to pursue institutional, economic and financial reforms in order to participate in the multilateral international trading system, China also claims its status as a developing country. Chapter 13 examines China's growing involvement in the world by taking the case of exploring the access to WTO as a multilateral trading system for integrating China. This includes a cost-benefit analysis of China's entry to the WTO as its opportunity and challenge. It also examines the relationships between WTO and developing economies, and China's development from an international perspective.

China has been changing its development approach by actively getting involved in economic globalization and internationalization. In September 2013 when visiting Central Asia and Southeast Asia, the Chinese Leader Xi Jinping proposed the Silk Road Economic Belt and the 21st Century Maritime Silk Road, also known as the Belt and Road Initiative. This is an economic strategy and framework focused on connectivity and cooperation among economies, primarily China and the rest of Eurasia, a combined continental landmass of Europe and Asia. The BRI consists of two main components, the land-based "Silk Road Economic Belt" and the oceangoing "Maritime Silk Road". This strategic initiative underlines China's pursuit of taking a bigger role in global affairs, and its need for development and cooperation in areas such as manufacturing, infrastructure and agriculture. Chapter 14 looks at the Chinese going-out strategy as a case. In the meantime, the authors review and summarize the findings from a number of studies in the special issue on China's changing integration. After that, the authors provide readers with international policy implications.

While there seemed to be an agreement that the Canada-US Free Trade Agreement (CUSTA) and the North American Free Trade Agreement (NAFTA) benefited the member countries, some analysts argued that the agreements had less impact on the bilateral Canada-US agricultural sector and trade because of other factors that contributed to agricultural and agri-food trade flows. Analysis from Chapter 15 finds that, based on the aggregate bilateral agricultural trade flows, a steady growth was generally identified since the implementation of the NAFTA. At the industry level, the impacts of the NAFTA on Canada-US agricultural trade varied with the sub-sectors analyzed responding differently to the bilateral trade and trade liberalization.

Chapter 16 discusses the essential features of transnational corporations (TNCs). According to the United Nations Conference on Trade and Development (UNCTAD), the world's transnational corporations (TNCs) – 40,000 parent firms and 250,000 foreign affiliates – account for two-thirds of world trade in goods and services; one-third in intra-firm transactions and the other third in inter-firm transactions. Foreign direct investment by TNCs and the transnational system of production and economic transactions are now the dominant element of the world economy, particularly with regard to economic globalization and international development. It is important to define TNCs in order to better understand their role and functions within a globally integrated system. This study explores traditional conceptions of TNCs by briefly reviewing their history. The study argues that when attempting to define TNCs a key feature that deserve specific attention is their increasingly powerful impact on international economic and trade relations and development. This impact stems from their business and economic influence, which in turn leads to leverage with government officials, as well as the financial resources at their disposal for public relations.

Concluding Remarks

German philosopher Georg Hegel and Chinese classic thinker Confucius pointed out that the world has two sides: east and west, yin and yang, boy and girl, good and bad, and so on. There is no west without east. If

there is no good, there is no such thing as bad. In addition, good and bad are opposite each other, and they stand in the same time. The Hegelian philosophy was reformed by Marx and Engels and applied to the Russian Revolution in 1917 and Chinese practice, which received particular results.

The research collection, *East vs. West*, applies for Hegel's thinking by comparing and discussing the relevant science, technology and institutional innovations in the east and west. The authors began from the eastern countries and believed that the system has different characteristics from the west. For example, China has a long tradition of “top-down” system. Indian decentralization from the federal to the states. This is perhaps some function of its colonial history. Like China, Japan has historically had a hierarchical system but it has been shaped by more recent experiences of conflict, imitation, and collaboration with western societies. With a lag, the history and experiences of South Korea and Chinese Taipei share similarities with Japan. The relevant government organizations and agencies are relatively independent and mutually dependent. Every system has different characteristics and effects on applications of science and technology. It's interesting to explore these features, which helps understand human lives.

In exploring the west, the authors were surprised to see the differences. When first looking at the west, the authors found that the family name was inverted, and "I" became upper case everywhere. Western society emphasizes the regularity and utilitarian nature in institutions, and has taken place in science and technology and industrial revolution for a number of times. This research collection believes that the United States as a mode has a clear separation of its power system. For example, the United States biotech policy is defined by its Ministry of Agriculture, Food and Drug Administration, and Environmental Protection Agency, respectively. In Brazil, relevant scientific and technological practices are governed by its regulations. Any establishment of an institution are based on the legal provisions. In addition to the western “rules" tradition, the Argentine governmental system is influenced by its farming culture and utilitarian factors.

The European Union (EU) and its member countries have been extremely active in establishing and influencing both domestic and international regulatory frameworks governing biotechnologies, although not always in an enabling and progressive manner. The EU “civil society” networks have done much to disseminate information and misinformation relating to biotechnologies and in some instances have throttled the adoption of such technologies that would improve well-being for citizens in developing economies (most notably in Africa and South East Asia). The tensions and disruptions present in Europe have been exported to and amplified in destinations like India where it is a challenge for evidence-based assessments to overcome the barrage of voices from self-interested lobby groups.

When beginning this journey, we speculated that the institutional system types might fall into two broad categories, with individual-focused systems predominating in “the West” and community (family or society) based systems predominating in “the East”. What we found was much more subtle and much more complex. This is the result of many aspects of societies, systems and cultures coming into contact and conflicting, interacting, collaborating and integrating with each other. Rather than playing up the sometime stark differences, it is perhaps more helpful to reflect on common goals shared within and across societies. Recognizing that “Each has its own Strengths and Weaknesses” it is perhaps time to put greater effort into discerning which kind of mechanisms and approaches to govern actually result in outcomes. These are in society’s interests, which serve vested interests and the interests of the select few and well-organized lobby groups. In this respect, this research collection raises questions and challenges for, readers, authors and thinkers to examine and build upon in a constructive manner.

Key Take-Aways for Moving Forward

China’s WTO accession, the Belt and Road Initiative (BRI) and other efforts at outreach and liberalization have stimulated reforms undertaken so far and provides a firm basis for reforms that need to be undertaken in the future. However, to support reforms, there is a need for a new organizational structure to design and

implement agricultural policies. While this structure needs to be streamlined to avoid overlapping and to ease the decision-making process, the institutional reform should not be guided by the accumulation of all existing functions in the hands of a smaller number of institutions or just one, as it is sometimes suggested. The reform process should rather focus on the redefinition of the role of government and a clear definition of policy objectives. Only then can an appropriate organizational framework to accomplish stated policy objectives be defined.

In particular the notion of the "role of government" needs to be re-examined. It is important to determine on when to assist, when to enable, and when to simply get out of the way – allowing citizens, including farmers, rural residents, and agro-rural enterprises to make their own decisions. In particular, the government needs to de-emphasize its planning activities and focus more on enabling activities. Therefore, government processes and psychology must continue to evolve from a top-down hierarchical "we know what is good for you" paternalistic approach to one that is service-and-needs oriented, responsive and accountable. As an example, "economies of scale" and "economies of specialization" in farming cannot be imposed from above. The circumstances in which they exist must be discovered and exploited by farmers themselves, but it is the government's role to allow land markets, equity markets and credit markets to function and to do so without discrimination.

Self-disciplining incentive systems are preferable to "bricks and mortar" institutions. Creating and building new institutions can be an important contributor to "getting governance right". However, it is often better to reflect and focus on appropriate incentive systems rather than a "bricks and mortar" approach to establishing institutions. According to scholars, institutions can develop their own vested interests and sometimes even perpetuate problems (and their own mandate) rather than resolve them. If carefully constructed, incentive systems can create an environment where firms and enterprises discipline themselves, without need of additional outside intervention or guidance.

Government bodies at all levels need to continue their efforts to be more service oriented. In the past, many government bodies focused on production and capital. Line ministries typically had commercial enterprises under their umbrella. With the past emphasis on achieving goals set out in a central plan, the management style was top-down and focused on meeting specific output and physical capital objectives rather than meeting the needs of consumers, citizens and society. Line ministries need to recalibrate their efforts and focus more on "enabling" the industrial sector and rural economy. They should become more "client-focused" and service-oriented, and pay more attention to the needs, bottlenecks and challenges facing their clientele (such as farmers, agro-food sector, rural enterprises and rural citizens). A wide-range of public service institutions – such as a rural education system; an agricultural research and extension system for farmers; an agricultural price information system; a sound, scientific, consistent and transparent system to determine the risks of pest and disease; agricultural and food product quality standards and institutions enforcing their implementation, to name just a few – are needed to improve the standard of living of rural populations and to allow countries, such as China, to be more competitive on international markets.

Governments need to make greater efforts to establish a more level playing field between rural and urban interests, across regions and across ownership types. Failure to do so undermines incentives, efficiency and productivity. Between levels of government and localities, greater efforts need to be made to establish a correspondence between authority, accountability, responsibility and resources available (including financial). The current trend is toward off-loading and increasing local-level responsibility without the commensurate transfer of funds and other resources. This increases off-budget and extra-budgetary activities, undermines transparency and accountability and increases opportunities for corruption or opportunistic behavior. In this respect, the role of government in terms of the delivery of public goods and services at the local level is in need of serious review, taking care to ensure consistency across jurisdictions and that the responsibilities do not exceed the resources available.

Problems need be properly diagnosed, focusing on causes rather than symptoms. For example, the persistence and success of often-persecuted informal rural credit institutions is really an indication of restrictive finance policies and of the failures and lack of flexibility and responsiveness within the formal financial sector. In this context, the incidence and magnitude of informal financial transactions suggest that these activities play a positive role in improving the lives and prospects for China's farmers and rural households. Another example is the spontaneous farmer associations which, in spite of limited resources, have managed to fill gaps in services which formal institutions charged with agricultural extension, agro-food marketing and other services have not addressed. Rather than being suppressed, these symptoms may actually be solutions in the making.

Create circumstances that allow winners to emerge. Few people are omniscient, whether they are in the public sector or in the private sector. Rather than being prescriptive and attempting to "pick winners" with respect to the forms and scale of institution, enterprise, firm or farm deemed desirable or appropriate, it may be more advisable to continue taking steps to "level the playing field" and allow winners to emerge.

Promoting competition: eliminating institutional fiefdoms in the agro-food value chain. China's primary agriculture and retail sector are increasingly responsive. But farmers and retailers have been handicapped by transportation bottlenecks, jurisdictional fiefdoms of input suppliers and value-chain intermediaries. This taxes producers, retailers and consumers alike, reducing what producers receive and increasing consumer prices, while also lowering choice. Empirical analysis and historical experience, both in China and elsewhere, show that sectors and enterprises that have been protected or coddled as a result of being designated a pillar of the economy are typically less efficient and responsive than those that are not afforded such protection. Managers of protected enterprises, including in the agro-food chain, do not always focus on efficiency and profits but, instead, are distracted by communal, social and political considerations. Overall, efforts to promote choice for producers and consumers and encourage competition across geographic boundaries and institutional jurisdictions will foster growth and improve well-being.

PART I:

DEVELOPMENT AND POLICY IN GREATER CHINA

CHAPTER 1

AN OVERVIEW

In international studies there is a significant debate related to the so-called “development model” and its trajectory. The development model becomes controversial in China and the rest of the world. As the world’s second largest economy in PPP terms, right after the United States, China is also the most populous country with about 1.4 billion inhabitants, 21 per cent of the world’s total. Moreover, China’s territory is 9.6 million km^2, making it the third largest country by area in the world, after Russia and Canada. A very large amount of literature and researchers from China and its counterparts explored so-called China development model in terms of the growing pace of domestic development and international trade growth. With China as an increasingly important player in the global community, it is time to assess China’s development model by looking into its opportunities and challenges faced from rural to urban areas. Started from this Chapter, this Section briefly drew on this discussion related to the development in China, including Hong Kong and Taiwan, as it grew as an important player in the global economy.

Introduction

China, officially the People's Republic of China (PRC)[1], is a unitary sovereign state in East Asia and, with a population of around 1.4 billion, the world's most populous country. Covering 9,600,000 square kilometers (3,700,000 square miles), China has the most borders of any country in the world. Governed by the Communist Party of China, it exercises jurisdiction over 22 provinces, five autonomous regions, four directly-controlled municipalities (Beijing, Tianjin, Shanghai, and Chongqing), and the special administrative regions of Hong Kong and Macau.

Thousands of years ago, China emerged as one of the world's earliest civilizations, in the fertile basin of the Yellow River in the North China Plain. For millennia, China's political system was based on hereditary monarchies, or dynasties, beginning with the semi-legendary Xia dynasty in the 21st century BCE. Since then, China has expanded, fractured, and re-unified numerous times. Since its introduction of economic reforms in 1978, China's economy has once again been one of the world's fastest-growing with annual growth rates consistently above six per cent till now.

Since 2016, China has become the world's second-largest. The country is also the world's largest exporter. China has become a member of numerous formal and informal multilateral organizations, such as the ASEAN+, WTO, APEC, BRICS, the Shanghai Cooperation Organization, the Bangladesh–China–India–Myanmar Forum for Regional Cooperation and the G20. China is a great power and a major regional power within Asia, and has been characterized as a potential superpower[2]. In this Chapter, we briefly drew on the

[1] The English word "China" is first attested in Richard Eden's translation in the year 1555 for the journal of the Portuguese explorer Duarte Barbosa. The demonym, that is, the name for the people, and the adjectival form "Chinese" were developed later on the model of the Portuguese chinês and the French chinois. The Portuguese China is thought to derive from the Persian Chīn, and perhaps ultimately from the Sanskrit Cīna. Cīna was first used in early Hindu scripture, including the Mahābhārata (5th century BCE) and the Laws of Manu (2nd century BCE), which may link to the exploration of China’s classic silk road. In 1655, Martino Martini suggested that the word China is derived from the name of the Qin dynasty (221–206 BC), a proposal supported by many later scholars, although there are also a number of alternative suggestions.

[2] For more information, please see the StayPlanet at https://stayplanet.com/China. Accessed December 13, 2018.

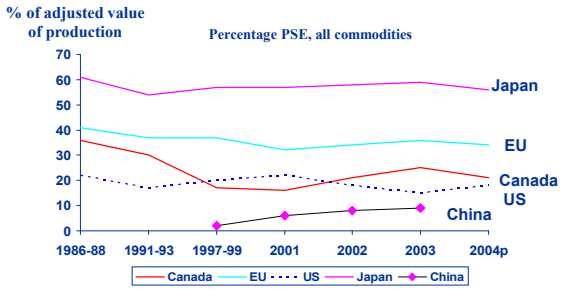
discussion of China's development trajectory as it grew as an important player in the global economy, starting from the rural reforms in the 1980s.

1. Rural Reforms and Development

With the majority of the population living in the countryside in China, agricultural policy reform becomes important in the country's economic reform and development. Since 1978, China has carried out fundamental reforms of its agricultural policies and its performance during the reform period has been impressive. China's accession to the World Trade Organization (WTO) in 2001 confirmed a further strengthening of the reform course it has been following for the last decades.

Even though the significance of agriculture in China's economy has fallen, it is still an important sector accounting for almost 15% of GDP and providing over 40% of employment. The share of rural population in the total is falling, but remains very high at 60 per cent in 2013. China is relatively scarce in agricultural land and water, having only 10 per cent of the world's arable land and its water resources per capita are around one-quarter of the world average.[3] Currently, China has about 200 million farm households with an average land allocation of just 0.65 ha. Limited arable land and a large rural labor force mean that in general China tends to have a comparative advantage in the production of labor-intensive crops such as fruits and vegetables and a disadvantage in the production of land-intensive crops such as grains and oilseeds.

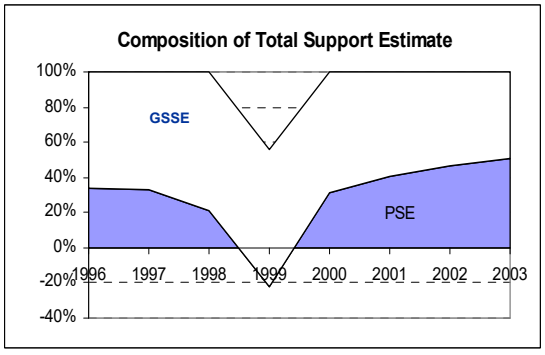
China's Producer Support Estimate is low compared to other OECD countries



2. China's Support to Agriculture

The main agricultural policy measures employed by the Chinese government cover producer support measures[4], which include domestic and trade policy measures, general services and consumer support measures. In China, the domestic policy measures include: state pricing, input subsidies, credit subsidies, direct payments, payments for returning farmland to forests, and agricultural taxes. Trade policy measures include: tariffs, tariff rate quotas, state trading and export subsidies. General services include: agricultural infrastructure, research and development, agricultural schools, inspection

China still needs to increase expenditures in general services



[3] According to the OECD's Agricultural Policy Monitoring and Evaluation 2017, China currently ranks first in worldwide farm production, producing in value terms almost one-third more than all OECD member countries combined. Agriculture remains a key sector accounting for 31% of total employment and contributing 9% of China's GDP in 2015. China has become a large net importer of agro-food products, in particular of soybeans, edible oils and sugar.

[4] The Producer Support Estimate (PSE) conducted by the OECD is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures, regardless of their nature, objectives or impacts on farm production or income. For more information, please see: https://stats.oecd.org/glossary/detail.asp?ID=2150. Accessed on November 29, 2017.

services and public stockholding. Consumer support measures include food price subsidies.

China's level of support to agriculture from policies fluctuated at low levels through the 1990s, rising more recently to 9 per cent in 2003, still well below the OECD average of 30 per cent. Support levels are the highest for import-competing commodities such as sugar and milk, but also for exportable maize. Grain markets remain distorted, mostly due to state trading which drives a wedge between the domestic and the world price. The Total Support Estimate is relatively high at 3.5 per cent of gross domestic product (GDP), reflecting though a large expenditure on general services, in particular investments in agricultural infrastructure to improve productivity.[5]

Since the late 1980s, China's agricultural policy has been aimed at increasing food production and farmers' income for achieving sustainable development. According to the OECD, China's PSE shows a drastic evolution of producer support in the last two decades. The share of the potentially most distorting forms of support in China has increased and in 2014-16 accounted for 74% of the total. China's policy changes include a programme to diminish maize production through a reduction in the area planned for maize and direct payments to enhance the conversion from maize production to other crops such as soybeans, pulses and feed crops. In 2016, China extended a single payment scheme called the "agricultural support and protection subsidy" to the whole country combining three earlier direct payments for grain producers, agricultural inputs and seed variety. Four-fifths of the funds allocated for this single payment are intended to protect arable land fertility; and one-fifth to support large-scale production.

3. Major Producer and Potential Market

China has ten persons to feed per hectare of arable land – more than twice the world average of 4.4 persons per hectare. Yet China has remained largely self-sufficient in food production and a major producer of many important commodities. For example, China produces over 40 per cent of the world's pork and vegetables. China's low shares of milk, sugar, beef, soybean, and fruit production reflect its relatively low consumption levels for these commodities. According to the OECD's document (TAD/CA/APM/ WP (2018)3), China has developed some direct payment programmes into a single area-based payment since the 2000s. This reform is currently under experiment in five provinces, i.e. Anhui, Hunan, Shandong, Sichuan, and Zhejiang.

Since the 1980s, China has made huge progress in meeting its objectives: agricultural production rose sharply, rural industries absorbed a large part of farm labor, poverty incidence fell dramatically and the level and quality of food consumption improved significantly. The commune system was replaced by a system in which individual families lease land from the collectives, ensuring that almost all rural households have access to land and are, at a minimum, food self-sufficient. One opinion argues that the Central Document No. 1 of 2018 is a turning point of its rural land reform. It is because the central government announced a policy to separate homestead property rights into three categories — collective ownership, contractual rights and tradable land-use rights.

Trade growth in China has shown its impacts of policy reform and development. China has become Canada's second-largest single-nation trading partner after the United States, and its first in Asia. One of the most important sectors for this trade is agriculture and agri-food. In 2004, agricultural trade between Canada and China increased to $1.5 billion from $789 million in 1997. During 2003 and 2004, Canada's

[5] The support to farmers as measured by the percentage PSE has increased from 3% in 1995-97 to about 15% in 2016, which is close to the OECD average. With its gradual growth for about two decades, China's level of support to agricultural producers has stabilized in recent years for the percentage PSE was fluctuating in the range of 14-16% in 2013-16. The Total Support Estimate (TSE) was 2.4% of GDP in 2014-16, thus about four times higher than the OECD average.