

10

Comparing National Sustainability in China and India

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China and India have experienced several decades of rapid economic growth. Much social science theory predicts that rapid growth will bring a host of destabilizing factors: rising income inequalities – the “Kuznets curve” hypothesis (Kuznets 1955); insatiable demands for political participation – the “Kings dilemma” of Huntington (Huntington 1968; 177); weakening social solidarity – the “Durkheim nightmare” (Durkheim 1893); and a population explosion – the so-called demographic transition (Thompson 1930). Recently, the problems of environmental degradation have been added to the list, in particular rising air and water pollution, increased deforestation, rapid biodiversity loss, and soaring greenhouse gas emissions – the “environmental Kuznets curve” (Panayotou 1997).

In all cases, the models have assumed that the threats *increase* during the period of rapid growth and then *decrease* during the period of growth deceleration as a result of both structural and policy responses – the familiar “inverted-U” trajectory. Income inequalities are resolved by redistribution, social anomies by a new form of organic solidarity, population explosion by declining fertility, and political participation demands by institutional inclusion. In the case of the environment, the threats can be brought under control by a transition away from industry, increased resources available for environmental protection, and rising social demands for effective regulation.

There is no promise however that the threats will decline or that existing institutions will not collapse in the face of them. Navigating across the upper portion of the inverted-U, or avoiding it altogether by “tunneling” to the other side, is the central issue for the social theory of developing nations and one of the most pressing contemporary challenges for both China and India.

Various versions of the inverted-U models – economic, political, social, and environmental – have been tested on cross-national data and the results are usually mixed. Yet models are useful not just as descriptive predictors but as heuristic devices for the interrogation of particular country experiences. Thinking about the China and India experiences using the expectations of inverted-U models and through an explicitly comparative framework helps us to better understand the precise challenges faced by both countries. For policy-makers engaged in long-term planning, these models remain indispensable even if their fit with the empirical reality of these countries (and others) is imperfect.

In this chapter, I will first reconceptualize the inverted-U challenges in terms of sustainability and then proceed to examine contemporary evidence from both China and India. This is followed by a discussion of the future pathways both countries will follow and a concluding section evaluating their comparative performance. I find that both countries require immediate adjustments in their growth models in order to protect their sustainability systems. The required adjustments differ, however, and the potential options also vary. China and India have outgrown development models, but the period in which they must consider sustainability models is just beginning.

1 A sustainability approach

Since the challenges of the inverted-U models are diverse, there is a need for a higher-order concept that brings together the various questions related to the core issues of human survival and well-being: health, material resources, freedoms and opportunities, security, social resources, and so on. The concept of “sustainability” – literally the ability to endure – is apt for this purpose. Early writers on human sustainability (Brown 1954; Kohn 1957) considered it essential for all nations to consider their long-term durability rather than only their immediate economic development. The question of sustainability began with a specific focus on the well-being of the natural environment. In recent years, it has crossed over into a more humanistic, or anthropocentric, focus on the well-being of human societies. In this context, it refers to the ability of human societies to endure at or above their current levels of well-being. Sustainability is seen as the logical successor to gross domestic product or the Human Development Index (HDI) as the best measure of human well-being because it recognizes the multidimensional sources of human well-being and because it explicitly takes into account future generations (Parris and Kates 2003).

The greater the number of future generations taken into account and the more broadly we conceptualize human well-being, the more aggressively a human society must confront sustainability challenges today. Richard Posner (Posner 2004: 150–55) suggests in light of uncertainty and technological progress that a reasonable view is a “grandchildren rule” that applies a zero discount rate to only two generations beyond the current one or about 100 years. This translates into an implied discount rate for infinite future generations of about one percent per year. Sustainability must therefore focus on whether systems are being maintained today to protect human well-being at or above current levels for the next 100 years, or at only one percent per year below those levels forever.

As to the breadth of the concept of “well-being,” Julian Marshall and Michael Toffel (Marshall and Toffel 2005) warn against including every desirable attribute of human society. We must allow that a sustainable human society can be far from just, pleasant, or progressive. Instead, human well-being must be defined in terms of those attributes necessary to live minimally productive and healthy lives. Both China and India are today societies that deliver human well-being to most members despite being unjust and brutish in many respects.

Thus, to restate the inverted-U challenges in terms of sustainability, we are concerned with the implications of rapid growth in China and India for the systems that support human well-being in the two countries for the next 100 years. This concept might be called “national sustainability,”¹ since we are concerned not with political systems, economic growth, or the environment *per se* but only with these things as they relate to the well-being of the human communities found in each state, the “nations.” Since these two countries account for 37 percent of the world’s population, this covers a large part of the sustainability picture for humanity as a whole.

Simon Bell and Stephen Morse have defined sustainability in terms of the underlying sub-systems that allow human societies to endure at their current levels of well-being. They together constitute “the sustainability system.” Thus, sustainability is “a situation where [the system] quality remains the same or increases” (Bell and Morse 2008: 12). The relevant sub-systems certainly include the natural environment and, for the moment, the threats to the natural environment appear to be the biggest challenge to human sustainability. However, other parts of the overall system – political, economic, and social – also need to be studied because of their contributions to human well-being and because of their impacts on the environmental sub-system itself.

At present, an agreed framework for measuring national sustainability is only in its infancy (WGSSD 2008). Different approaches stress sub-system inputs, often termed the “capital” approach; sub-system policies, often termed the “policy” approach; and sub-system outputs and outcomes – direct measures of human well-being. In the following sections, I will make use of widely available indicators of inputs, policy, and outputs/outcomes to assess the quality of sustainability sub-systems in China and India: economic, environmental, social, and political (Table 10.1). In each case, I use the maximum and minimum values of each data set to construct simple quintile categories, with each representing one fifth of the total range. The two countries can then be rated in terms of their quintile ranking, from 1 (best) to 5 (worst).

Table 10.1 National sustainability: China and India

Indicator	Quintile (1-Best to 5-Worst)	
	China	India
ECONOMIC		
Economic Risk Indicator (Euromoney 2010)	1	2
Sovereign Risk (Standard & Poor's 2010)	2	2
ENVIRONMENTAL		
Environmental Performance Index (ECWIP 2010)	3	4
Global Climate Risk Index (German Watch 2010)	5	5
Proportional Environmental Impact (Bradshaw, Giam, and Sodhi 2005)	5	4
SOCIAL		
Multidimensional Poverty Index (UNDP, 2010)	1	3
Gender Inequality Index (UNDP 2008)	2	5
Life Satisfaction (NIP 2005)	2	3
Social Trust (WVS 2006)	2	4
POLITICAL		
Political Stability (Kaufmann et al. 2010)	3	3
Government Effectiveness (Kaufmann et al. 2010)	3	3
State Fragility (SFT 2008)	2	3
Political Weakness (Rice and Patrick 2008)	4	2
Security Weakness (Rice and Patrick 2008)	2	3
Average* Quintile (1-Best to 5-Worst)	2.6	3.2

* Average of means of each of the four sub-systems.

I then consider the dynamics of overall system quality, asking how and whether China and India can respond to the challenges of the inverted-U for national sustainability.

2 Current assessments

Rapid economic growth in China and India is nothing new. China's human development index rose by 50 percent between 1950 and 1973, compared to a gain of 32 percent in India, while life expectancy rose from around 40 in both countries to 66 in China and 56 in India. Life expectancy in China is now 74 compared to 64 in India. India's HDI rose at the same pace as China's from 1980 to 2010 – leaving a roughly 20 percent gap between the two in terms of their material development. China and India are both growth success stories. And that growth shows no signs of slowing.

The rapid growth of the economic system is the source of many of the challenges to human sustainability represented by the inverted-U. However, as a positive source of human sustainability it must also be protected against collapse. While “catch-up” models assume that rapid growth (in the 8–10% range) will continue in both China and India at least until 2020 (Li and Zhang 2008; Rawski and Dwight 2008), and more likely until 2030, the economic sub-systems in both countries face unique threats. National sustainability requires not only that the threats caused by economic sub-systems be met, but also that the threats to them be met.

The composite economic risk index compiled by *Euronomy* combines credit, finance, debt, structural variables relating to labor and investment/savings, and growth. From this perspective, both countries have economic systems that are highly stable, consistent with the premise here that they are rapidly growing economies far from the frontier and are likely to continue growing. Indeed, the economic sub-systems are the only ones that are very “healthy” in international comparison, perhaps too “healthy” for the good of other sub-systems. As developing countries, China and India have also both been remarkably successful in establishing the trust in their sovereign debt,² as shown by the Standard & Poor's sovereign risk ratings.

Most comparative analysis suggests that China leads India with respect to its economic system, although both are success stories (Prime 2009). China's economic sustainability has been proven through three distinct crises: the domestic banking crisis of the 1990s, the Asian Financial Crisis of 1997–8, and finally the global economic crisis of 2008–9. India,

meanwhile, has sustained rapid growth since the initiation of market reforms in 1991, although it has embarked on a much less sustainable fiscal trajectory than China.

It is also important to note the different ways that the two countries have arrived at similar levels of economic sub-system quality. China has led India in terms of transportation and telecommunications infrastructure, but India has led China in terms of skilled labor for information technology and complex manufacturing-based operations (Prater, Swafford, and Yellepeddi 2009). China has made itself a base for flow-through export demand, while India has concentrated more on domestic demand. As a result, the main threats to economic sub-system quality in China are the transition to value-added manufacturing and services including the financial sector, while India's challenges revolve around infrastructure constraints and the related low level of savings.

The quality of the environmental sub-system that supports human sustainability includes a wide range of factors. These include access to basic environmental needs like water, air, and land, as well as protections against natural disasters. Every national society also depends on a broader regional and global environmental system for its sustainability. Management of the environment has to be consistent with human survival for many generations, taking into account uncertainty about the ecological needs of humans that may not be well understood at present.

Existing comprehensive measures of environmental systems for India and China generally put the two countries as roughly similar, as both having seriously degraded environments. Both the Environmental Performance Index (EPI), which looks primarily at the management of domestic environmental systems, and the Global Climate Risk Index (GCRI), which is based on retrospective economic and human losses from extreme weather, put the countries in the fourth and fifth quintiles respectively. In the latter case, both China and India are among the 20 nations most vulnerable to climate change because of their huge populations, widespread poverty, and environmental degradation caused by rapid growth. Only the Proportional Environmental Impact (PEI, Bradshaw, Giam, and Sodhi 2010) indicator, which considers environmental quality and vulnerability as well as the quality of policies and regulations in place, rates India as better than China.

Consistent with so-called environmental modernization theory – a linear or logarithmic function – and the second half of the (quadratic) inverted-U model, countries that are wealthier tend to have better records of environmental management. This fact can be seen visually

if we compare the EPI ratings to income per capita (Figure 10.1). What this chart shows is that China, given its income, is a large *underperformer* whereas India is a less severe underperformer. India's environmental system is in relatively better health than China's given that it is poorer.

Studies of within-country variation confirm environmental modernization theory. In their 44-indicator measure of social, economic, and environmental sustainability in 2339 county-level units in China in 2005, Lijiang Sun and colleagues (Sun, Ni, and Borthwick 2010) find that the most sustainable areas are overwhelmingly rich coastal cities while the least sustainable are poor inland rural areas. Despite lower population densities and more abundant natural resources, the poorer parts of China in the west are unable to generate social and economic resources, and that in turn degrades environments.

Jared M. Diamond refers to China as a "lurching giant" because rapid economic development both degrades the environmental system through direct impacts and enhances it through technological and policy solutions. Diamond is impressed with China's "unique form of government, top-down decision-making" that makes environmental improvements possible. However, Indian castes, he notes, have long provided an equally effective bottom-up mechanism of sustainability by limiting different groups to the exploitation of just one natural resource such as a stream, certain farming, certain lands, and so on that they pass on to their

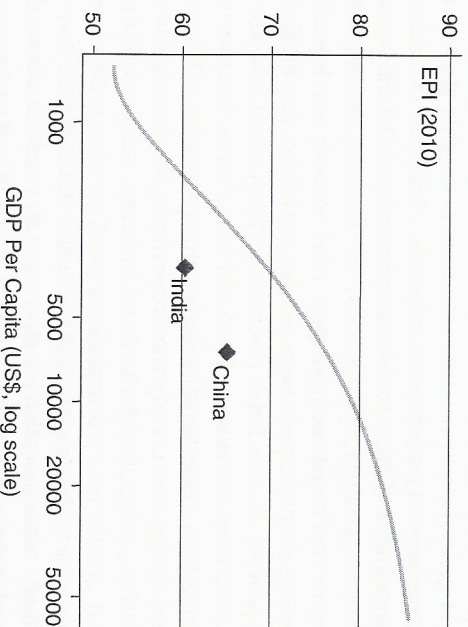


Figure 10.1 Income and environmental system quality (n = 149 countries)
Sources: World Bank 2011; YCELP 2010.

children (Diamond 2005: 377). Modernization poses a threat to both mechanisms, however – one reason that their environments may have declined so precipitously.

Stephen Morse (2008: 80) warns that the assumption that increased wealth will improve the environment is comforting "especially to those countries undergoing rapid economic development such as China." Yet as he notes, the purely environmental quality components of the EPI without the socio-economic impact and policy response components more closely approximate the (quadratic) inverted-U environmental Kuznets curve, consistent with the PEI. In other words, the greater sustainability of coastal areas in China may reflect the more extensive policy response and resources for managing impacts. Stripped of these GDP-driven factors, the environmental degradation of those regions would stand out as worse than that of the poor but undeveloped inland, as others have argued (De Groot, Withagen, and Zhou 2004).

In other words, in comparative terms, China is already underperforming its income-level peers in environmental protection and, stripped of income-related components, its environmental record may be worse still. China therefore has likely accumulated severe quality problems in its environmental sub-system when compared to the more typical India. China's environmental sub-system may have reached a point of near-collapse, whereas India's still has the chance of avoiding the worst parts of the inverted-U. As Thomas Homer-Dixon puts it: "By degrading its environment, drawing down its energy resources, and creating appalling disparities between its rich and poor, China is stretching the limits of its elasticity, perhaps close to the breaking point" (Homer-Dixon 2006: 276).

The social system that underpins human sustainability refers to the norms and structures that facilitate social cooperation. From the standpoint of objective structural challenges to social cooperation such as poverty and gender inequality, as well as subjective experiences of life satisfaction, China's social system is in better shape than India's. However, all of these measures except perhaps social trust have a positive linear, rather than inverted-U, relationship to development levels. Growth has made both countries more sustainable in terms of their social systems.

The more pressing aspect of social systems is social trust and conflict, which is usually hypothesized to follow the inverted-U pathway as rapid growth loosens traditional social bonds before new structures and resources can be brought to bear on creating a new social stability. For instance, ethnic alienation and conflict has been escalating in both

countries as they have grown rapidly, in Tibet and Xinjiang for China, and Kashmir and the Northeast states for India. Rapid growth has stimulated sub-national identities and perceptions of deprivation. The social trust indicator thus shows China as having unusually strong social fabric (consistent with a culturalist theory of Chinese exceptionalism that has underpinned its social and political stability despite rapid growth) while India looks more typical of a rapidly growing country caught at the top of the inverted-U.

Finally, political system quality refers to the ability of institutions to deliver valued public goods such as security, stability, conflict resolution, and welfare. Both countries have often been seen as teetering on the brink of political collapse (Akbar 1985; Chang 2001). That neither country has collapsed tells us nothing about the value of these predictions – they might be good ones that simply did not come to pass. Several multi-country research projects seek to theorize the causes of political collapse and then rate countries accordingly. In most cases, China comes out ahead of India. The reason is that threats to the state's coercive monopoly seem less severe in China than in India, while the effectiveness of state institutions in formulating and implementing policies seems greater in China than in India. In effect, state dominance is used as the metric for most political system quality measures.

This essentially Weberian notion of political sustainability is much like the “political order” theories of Huntington. He admired North Korea with its “well-organized, broadly-based, complex” political system and called China “one of the most outstanding political achievements of the mid-twentieth century.” However, it is often forgotten that Huntington also believed that India had achieved significant political order as a result of the highly institutionalized Congress Party and Indian Civil Service (Huntington 1968: 84, 342, 343). More to the point, political system quality may depend more on the ability of a political system to manage social conflicts and maintain legitimacy than simply to dominate society. Pranab Bardhan argues that because of its relatively greater social heterogeneity, India is better at managing conflicts even if China is better at solving collective action problems. Yet over time, he argues, it is countries that manage conflicts that are more likely to endure – especially as they ride over the hump of the inverted-U. “Indian heterogeneity and pluralism have ... provided the basis for a better ability to politically manage conflicts, which I am not sure China’s overarching homogenizing bureaucratic state has so far acquired, even though this ability is likely to be sorely needed in the future years of increasing conflicts inevitable in a fast-growing

internationally-integrated economy with mounting disparities and tensions” (Bardhan 2003: 17).

The Economist Intelligence Unit (EIU) states: “India’s democratic institutions are firmly entrenched and resilient, with orderly and generally accepted transfers of power. The risk of political collapse is therefore much lower than in most other developing countries in Asia” (EIU 2010: 5). By contrast, its assessment of China notes that “corruption, and a growing gulf between the political leadership and the mass of the public whom they are meant to represent, are the most obvious consequences of the failure to introduce political checks and balances” (EIU 2009: 9).

One political stability rating system, by the Brookings Institution, finds that India is on a more sustainable political trajectory than China because of its democratic system – which accounts for 40 percent of its overall political strength rating. Brookings also includes gross human rights abuses as an indicator in a lack of security for citizens vis-à-vis the state. This factor, coupled with more accurate measures of civil unrest in China’s far western Xinjiang and Tibet regions, leads to a closer measure of security in the two states as well. As Brookings notes: “Contrary to some conventional usage, we do not equate ‘strong’ states with authoritarian or semi authoritarian regimes that impose their will within or beyond their borders, a criterion that would make North Korea, for example, a strong state (rather than a weak one, as we regard it). Instead, a state’s strength or weakness is a function of its effectiveness, responsiveness, and legitimacy across a range of government activities” (Rice and Patrick 2008: 3).

Perhaps this explains why, as Guang shows in this volume, local officials in China are increasingly responding to land disputes in an “Indian manner,” although they would be loathe to admit as much. As Edward Friedman relates: from “Gandhi’s supposed romanticism to various environmental movements, India is experienced by the politically conscious in China as weakened by a lack of a Nietzschean-like will to power and domination. India’s surrendering power and political will to societal forces in a liberal democracy, is, from the perspective of CPC nationalism, imagined in Beijing as diffusing effort, capacity and possibility away from a strong central state which would supposedly have the will and wherewithal to struggle in the anarchic and amoral international world so that the nation could win” (Friedman 2009: 85).

To the extent that democratic mechanisms support this political resilience, India is clearly ahead of modernization expectations, whereas China is increasingly behind. The basic problem is a tendency to conflate bureaucratic authoritarian rule with political system quality

and to view politics as a threat to states rather than as a process of state-building (Hameiri 2007). If political sustainability depends upon the creation of institutions that both deliver public goods and manage political conflicts, then again we are left with a mixed comparison between China and India.

In sum, the systems underlying national sustainability in both China and India have come under significant stress as a result of rapid growth. Both face severe environmental stresses, while India confronts social stresses and China political stresses.

Integrated comparative assessments remain very tentative (Gilley 2011), however. Because of this, we need higher-level theories that explain national "collapse" in terms of a hierarchy of sub-systems. There is at present no such hierarchy that can predict social collapse. Diamond (Diamond 2005) has argued for the centrality of environmental sub-system and the contributing role of political and social sub-systems, while Tainter's earlier theory and its successors (Caldararo 2004; Railey and Reyecraft 2008; Tainter 1988) centered on the degradation of political and economic sub-systems as a result of excessive complexity. Most, like Homer-Dixon (2000; 2006), admit the interrelatedness of the sub-systems, and the inherent unpredictability of their effects.

China, by virtue of being richer, has the resources to be a more sustainable society than India under ecological or political modernization theories. However, in practice, it is "straying from the path" of becoming more environmentally and politically sustainable as development proceeds. As development has progressed, it has accumulated rising environmental and political sustainability deficits without enjoying the concomitant windfalls that might allow it to swing back into equilibrium. As a result, it requires ever-faster economic growth to prevent rising dissatisfaction. In short, China is caught in a razor's edge sustainability race.

India, by contrast, has all the problems associated with a lower level of development. But it is along, or, in the case of political sustainability, ahead of the modernization trajectory, meaning that it is more sustainable than would be expected given its income level. As development has progressed, India has accumulated rising environmental and political sustainability surpluses, such that the strains and stresses of modernization are accommodated. Perhaps as a result, India is less driven to deliver high growth.

The dilemma of growth models – that they create problems even as they create resources for solving them – only raises the key question: can

political leaders in China and India leverage new resources to make the necessary changes?

3 The Dynamics of Sustainability

While sustainability challenges are only now becoming acute, political leaders in both China and India have thought about the issue for several decades. In China, beginning in the 1980s, growing worries among intellectuals about the need to assure national sustainability began to affect policy. By far the most prominent voice in this debate has been government researcher Hu Angang, who has analyzed in turn the challenges to the nation of population pressures (Hu 1989), fiscal incapacity (Hu and Wang 1993), regional inequalities (Hu, Wang, and Kang 1995), environmental decay (Hu 1997), political corruption (Hu 2001), and global integration (Hu 2002). The collapse of communism in the Soviet Union in particular prompted this sort of wide-ranging analysis of the environmental, social, political, and economic problems that had accumulated within China's development model. Creating sustainable institutions and practices was tied to the responsibility to protect the Chinese nation and the CPC.

As part of the Five-Year Plan beginning in 1995, the Party adopted a new maxim of "sustained, fast, and healthy growth." *A People's Daily* commentary of 1995 said: "The rapidity we need is a sustained rapidity rather than a rapidity over one or two years. Therefore, when setting a speed, we must leave some margin, and the current speed must aim at creating favorable conditions, rather than placing obstacles, for future speed ... If we fail to attend to these problems at an early date, a sustained economic development will be unlikely and we will become powerless before environmental and social problems" (*People's Daily* 1995; October 17: 1). Thus for China, sustainability has been embedded in a grand strategy of survival for nation and regime. As Lo notes of China: while "the CPC is solidly entrenched, it remains nervous about the sustainability of economic growth, tightening resource constraints and ethnic tensions. It worries about its continuing capacity to deliver good governance and maintain regime legitimacy" (Lo 2010: 2).

In India, by contrast, the idea of sustainability was more integrated into the founding myths and ideology of the regime. Gandhi's many sustainability-linked concepts included holism, localism, participation, naturalism, ecological stewardship, and limits to consumption (Cox 2004; Gruzalski 2002; Khoshoo and John 2009; Lal 2000). Whereas activists like Hu Angang in China have struggled to connect

sustainability concerns to their country's political and cultural heritage, those in India have had the opposite problem of being trapped within the overpowering influence of Gandhi.

Gandhi's ideas were of course honored more in the breach than the observance by socialist planners under Nehru. But India was always open to the idea of sustainability because of Gandhi's influence, whereas the idea of limits to growth were tantamount to political treason under Mao. India presented one of the key papers to the Earth Summit in Brazil in 1992 (while China did not participate). The idea of sustainability was incorporated into India's Ninth Five Year Plan in 1997. While both countries aim at national survival, India's goals have not been couched in the language of regime or government survival. Moreover, India's strategy explicitly integrates social, economic, political, and environmental sustainability (consistent with the Gandhian heritage) whereas for China, political sustainability is treated as a separate project.

Political leaders in both countries have strengths that could help them to manage sustainability stresses better than in other countries in Asia (compared, say, to Thailand, the Philippines, or Burma) and their economic growth trajectories will provide new resources for change. Both can draw upon significant civilizational resources. Indeed, that is why they are both ancient civilizations. A tentative conclusion is that both countries fit the "lurching giant" description of Diamond – meaning they are subject to "changes for the better and changes for the worse, often in rapid alternation" (Diamond 2005: 374). This may be precisely because they are getting closer to the top of the inverted-U where one would expect to see a simultaneous existence of extreme challenges with the sudden influx of structural and policy solutions to them. The dynamics of lurching in China and India raise a number of issues, in particular how far can they lurch without collapsing, or putting themselves on a trajectory of collapse that is virtually impossible to reverse? Many have argued that India's social fabric is torn beyond repair or that China's political system is likewise irreparable.

It may be that there is a sort of "double movement" in sustainability paths that parallels the nineteenth-century "double movement" of market expansion and market protection paths by Polanyi (Polanyi 1944). China may be more prone to sudden lurches historically than India because of its particular civilizational features, such as centralization vs. decentralization, homogenization vs. pluralism, and so on.

Threats to the sustainability system resulting from rapid growth *can* be ameliorated through structural and policy responses. However, for

countries like China and India, this transition will be dramatic and risky. It is *dramatic* in the Myrdalian sense of an intense, immense story that speeds towards a climax with an uncertain ending. The ending will be written by choices made by civil society and elites in the societies who can choose to undertake the difficult tasks of embracing reforms to ensure sustainability. "The action in this drama is speeding toward a climax. Tension is mounting: economically, socially, and politically" (Myrdal 1968: v. 1, 34).

The transition is *risky* in the sense that by definition, inverted-U transitions are most unstable just as they reach that climax, the peak of unsustainability. "The only way onward is to keep wringing new loans from nature and humanity" (Wright 2004: 84), which unfortunately have both been pushed to their limits. The choice then is to make radical changes to restore the underlying sustainability sub-systems. But the political will to change course may be too little, or it could simply be too late. Policy-makers might believe that they can tunnel under the inverted-U somehow, averting the worst phase of unsustainability. But it may be too late. The Asian Drama of today is the drama of sustainability choices in China and India (Lam and Lim 2009).

Optimistic assessments of the potential of these Asian giants to lurch their ways back to sustainability are common. Gary Jefferson and colleagues believe that China's institutions will respond effectively to the social challenge on inequality, if for no other reason than China's leaders have a vested interest in the reform process (Jefferson, Hu, and Su 2006: 45). Frauke Urban (2009) argues that both China and India have an opportunity to make a transition to low-carbon energy through the use of domestic natural resources and the choice of technology. He stresses the importance of not assuming past models apply because, for instance, countries like China and India can achieve technological leap-frogging, going straight to best-practice low carbon energy, and because they often have options such as local bio-fuels and nuclear fast reactors that provide immediate Pareto (win-win) gains, a point made by others (Raj and Rajan 2007).

The Chinese and Indian growth "miracles" have been useful illustrations of catch-up-based growth. However, the early development models were deficient in not paying attention to the question of sustainability. The transition to lower growth at the technological frontier requires structural, sectoral, institutional, and strategic adjustments. There is certainly no singular sustainability model and yet both countries could learn from one another in many respects. India could feasibly borrow from Chinese experiences in economic system quality

by paying more attention to fiscal probity and in social system quality by paying more attention to its spatially dispersed urbanization-driven poverty alleviation strategies. China could feasibly borrow from Indian experiences in environmental system quality by more carefully managing industrialization and in political system quality by allowing for more participation and voice in decision-making. Both countries should learn from each other to understand the complex dynamics of human sustainability systems.

Doing so requires political leadership and social support. There is no saying which country will do better in this "second transition" following the "first transition" to rapid growth. The contingent and interactive nature of development decisions in any large developing country like China or India means that the world can only watch and wait.

Notes

1. *minzu kechixuxing* in Mandarin Chinese, *jātiya nīrantarāṭā* in Hindi.
2. A good measure of external views of their economic stability.