The browning of Chindia

India and China need to reorient socio-economic priorities to avoid ecological disaster. Can they?

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In the first part of this op-ed piece published on Wednesday, I considered two risks to the continuation of the spectacular growth of China and India: The risk of a cyclical downturn and the risk of serious social and political instability. I now turn to the third risk: The risk of domestic environmental supply-side constraints on economic growth becoming binding.

I want to focus here on the local (national) natural resources of clean, fresh water and fertile land. (Some would add clean air as well.) These are not only important domestic 'consumer durables' but also key inputs into the production of the goods and services that are captured by conventionally measured GDP indices. Although both fresh water and fertile land are in principle renewable or restorable given enough time, energy and other resources, they are in practice being depleted, polluted and poisoned at a spectacular, increasing and unsustainable rate.

These resources are either under-priced or not priced at all. In India, for instance, water is supplied to the agricultural sector virtually free of charge. 'Flat rate pricing' for agricultural power means that the private marginal cost of electricity use in agriculture is zero. The environmental externalities of land use (erosion, deforestation, desertification) also are not priced properly or internalized in other ways. The environmental consequences are disastrous. The resulting depletion and destruction of water and land resources is a form of environmental capital depreciation, which should be deducted from the net real output or real national income measures used in the growth accounting exercise. Instead, it is ignored. Output is, therefore, overstated.

The water constraint is likely to be the first one to become binding in both China and India, certainly within 10 years. It will impair even the production of those goods and services included in conventional GDP measures. By 2020, Owec (the Organization of Water Exporting Countries that will no doubt be created soon) may well be more influential than Opec. It may seem strange that with 71% of the earth's surface covered by water, this would become the binding constraint on growth. Unfortunately, only 3% of this surface water is fresh water.

Well-informed observers of Chindia, such as Martin Wolf of the *Financial Times*, argue that Chindia will avoid these disasters by learning to price these scarce resources (especially water) appropriately. After all, the advanced industrial countries, including the UK, the US, Germany and Japan, have made considerable strides in that direction.

There are two problems with this optimistic perspective: Scale and speed. When the UK was 50 years into its industrial revolution (around 1820), it had 21 million inhabitants. Today, it has 60 million. The US in 1850 had 24 million people; it had 76 million in 1900 and today has 300 million. Today, a couple of decades into their

industrial revolutions, China has 1.3 billion people and India, 1.1 billion. Over the 80-year period between 1820 and 1900, UK real GDP grew at an average annual rate of 2.06%. Over the 50-year period between 1850 and 2000, US real GDP grew at an average annual rate of 4.07%.

China proposes to have an annual growth rate of real GDP of not much less than 10%. India shoots for 8% or 9% real GDP growth. What these two countries jointly propose is growth on a scale that is more than 200 times larger than what the UK and the US managed during their industrial revolutions. The national, regional and global environmental impacts will be cataclysmic. Chindia will not have a century or more to figure out how to make growth environmentally sustainable—a process still far from complete in the UK and the US. They have less than a decade.

Unless China and India reorient their growth policies towards environmental sustainability, the 21st century may well become the century of Chindia—but for a very different reason from the one prophesied by the current cheerleaders.
I am not arguing that things are bound to go disastrously wrong. It is possible that all water and energy use (including agricultural) in India will soon be priced at something close to long-run marginal social cost. It is, however, more likely that neither long-run marginal social cost pricing of water and power, nor some other effective non-price rationing mechanism for scarce water and power, will be put in place in the foreseeable future. It follows that there is a significant risk that things will go disastrously wrong.

Just how likely are the prompt and massive reorientations of economic and social priorities in both India and China that are necessary to avoid disaster? History offers little guidance, as problems on this scale and of this scope have not occurred before. Because India's 60-year experience with an open, pluralistic and democratic system of government gives it an edge over China with its 60 years of totalitarian communist party rule, I am more optimistic about India than about China. But I have serious concerns even for India.

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