CROSS-SECTORAL

Reforming China's infrastructure sectors

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China is conducting large-scale administrative and market reforms in the infrastructure sector. Given the scale and scope of the reforms required, their outcome is far from ensured.

Over the past two decades, China shifted from a centrally, planned economy to a commercial, competitive one. Rapid economic growth and equally rapid integration into the global economic system is putting huge strains on infrastructures. In recent years, the government had to channel massive resources to keep up with required investments. Between 2001 and 2005, more was spent on roads, railways and other fixed assets than in the previous fifty years (Economist 2008). Beijing's newest terminal airport, world's longest, is an example of the numerous projects that flourish across the country.

In two decades, China has built an expressway network that crisscross the country, second only to America's interstate highway system in length. To cater the twenty millions of private cars, China's aim is to have 70 000 km of expressways by 2020. Between 2006 and 2010, the amount of USD 200 billion is expected to be invested in railways alone, four times more than in the previous five years. World Bank's officials call it the biggest expansion of railway capacity undertaken by any country since the nineteenth century. The development of new high-speed lines, for instance the Beijing–Shanghai, will soon provide a competitive alternative to flying. Even if the government has made the development of railways a priority in the Five Year Plan, railway may still remain a bottleneck because of the country's formidable economic growth.

Concentrating only on the investment side may not be the solution. Firstly the amount of money the government can direct to the infrastructure build-out is limited by definition and the demand, huge. According to the World Bank (2008), China's railways carry 25 per cent of the world's railway traffic on just 6 per cent of its track length. The 80 000 km of rail tracks carry two third of the country's inland freight. In fact, by adding passenger and freight traffic, China Rail is world's busiest railway. Earlier this year snowstorms paralyzed much of the network in southern China, a stern reminder to both users and government of the railway system's inadequacy. Secondly pouring money into infrastructure can achieve only so much. These investments that should be as efficient as possible—something that only sectoral reforms can achieve.

Building on two decades of reforms

Further reforms are needed to make sure that the money is spent wisely and that the consumers benefit. This is by no means easy. The previous rounds of reforms conducted in each sector by the Chinese government met with various level of success (see Table 1). For sure there have been recurring signs that the government intends to deepen reforms across the infrastructure sectors including telecommunications, railways, postal and civil aviation industries. The National Development and Reform Commission (NDRC), the country's top economic planning agency, keeps resolutely pushing for expanded market access, more competition and a reorganization of the state-owned assets.

The telecommunication sector provides an illustration. Despite the introduction of competition in fixed and mobile services more than a decade ago, the incumbent mobile operator still has a two third of market share, while the geographical division has given the two fixed-line operators a quasi-monopoly in their respective markets. The failure of market mechanisms in the telecommunication sector has prompted the government to embark on another major restructuring in May 2008. The new round of reform went about in the usual top-down approach, both reshuffling management and reallocating assets across companies. Once the dust will have settled down, all licensed Chinese telecommunication operators should be allowed to compete in the fixed and mobile segments, hopefully prompting a real change in the competitive nature of the sector.

> The previous rounds of reforms met with various level of success

Railway, too, is bound to come under scrutiny. The problem is, not only that they the sector remains highly centralized, but also that the central government is unwilling to shoulder the whole cost of its massive expansion program. An additional issue lies in the dual role play by the Ministry of Railways, as it is both responsible for railway policy, regulation and commercial operation. This is particularly problematic since private investors are looking for a clear separation between functions so as to maximize the protection of their investments. There are signs of opening as the Ministry of Railways supported the establishment of a number of railway joint-ventures, that it jointly own with provincial governments, enterprises and private investors (as minority shareholders). Any kind of deeper reform though will be difficult to conduct: the sector is organized around 18 regional railway bureaus about the same size of a European national railway company and as diverse (Rong and Bouf 2005).

So far reform in the electricity sector has

Table 1 | Status of reforms in selected sectors as of May 2008

	Telecommunication	Railway	Electricity
Regulatory independence	No independent regulator (MII)	No independent regulator (Ministry of Railway)	State Electric Regulatory Commission
Competition	Duopolies in fixed and mobile sectors	No competition across provincial railway bureaus	Competition in generation and duopoly in transmission and distribution
Legal framework	No telecommunication law but a regulation (2000)	Railway Law (1990)	Electricity Law (1995)

proven the most successful. Launched more than two decades ago with the aim to cultivate a market-oriented electricity sector, the reforms covered generation capacity, grid reliability, market efficiency and lately energy sustainability (Ma and He 2008). There too restructuring has mostly been a carefully managed top-down process.

The overall reform process of the infrastructure sector will no doubt be impacted by the Chinese government's administrative reforms. Changes are taking place all along the chain of command. New commissions for energy and communications are being established above Ministerial rank. Sectoral reorganization of once powerful industrial ministries, like railway or water resources, will likely alter the relationship between the state-owned enterprises who dominate the infrastructure sectors and their sponsors. The erstwhile powerful Ministry of Railways, which even managed to set up a telecommunication operator, Tietong, has come under pressure after changes in the market. Competition from the road, brought about by the phenomenal construction of highways, has put a dent its monopoly on transportation.

Broader regulatory changes will also start to impact the infrastructure sector. Culminating a thirteen-year drafting process, China enacted last year its first competition law, the Anti-Monopoly Law, which become effective in August 2008. However, and even if the law is more detailed than the basic competition statutes in the United States and the European Union, the authorities will enjoy substantial discretion at the outset. Moreover sectoral regulators such as agencies or Ministries, when they exist, compete with the NDRC in its capacity of cross-sectoral policy-making agency.

Third parties in the reform process

Many had expected that China's accession to the World Trade Organization (WTO) would have a beneficial effect on its infrastructure reform (CIRD 2002). Since most infrastructure sectors fall outside the General Agreement on Trade in Services (GATS), accession has made little difference. Postal services, one of the key services currently not covered by the GATS, only recently completed reform to separate government functions from enterprise management. Moreover, with the stalemate in the current round of services negotiations, there is little hope to see any pressure for reform coming from the WTO.

Given the attention paid by investors to their return on investment, pressure to reform may one day come from the private sector. So far the infrastructure sectors witnessed mixed levels of participation from the private sector. Private participation in the energy sector has decreased over the past five years while water and sewage gained interest. The Ministry of Railways is now turning to provincial governments as well as to companies (including private ones) and the stock markets for funds. Most notably the telecommunication sector has been devoid from any large private sector involvement (see Table 2).

Conclusion

China's infrastructure development is simply mind-boggling. The future challenges it faces are no less so. The government will have to

Table 2 | Private participation in the Chinese infrastructure sectors, 2002–2006

	Energy		Telecommunication		Transport		Water and sewage	
Year	Number project	Investment USD million	Number project	Investment USD million	Number project	Investment USD million	Number project	Investment USD million
2002	49	1351	1	1430	7	1765	18	918
2003	44	4624	0	0	8	2545	25	662
2004	24	1205	0	0	8	764	27	598
2005	27	1544	0	0	11	6268	41	984
2006	13	520	0	0	13	6908	40	1011
Total	157	9244	1	1430	47	18250	151	4173

Source: World Bank, Private participation in infrastructure database (data retrieved in June 2008)
Note: In transport, roads account for more than half (53%) of the total investment, followed by seaports (26%), railroads (13%) and airports (6%).

China's infrastructure development is simply mind-boggling

keep increasing the capacity and quality of infrastructure while reforming the industry to be more resilient to the new economic environment. Reforms in the various infrastructure sectors started at different times, proceeded at different speed and resulted in different outcomes, ranging from fairly competitive markets to strong monopolies. In many ways, China had the same priority shifts at various stages of restructuring and reform as in other developing and developed countries. What may have lacked is the institutional capacity to carry the reforms all the way through, notably by setting up relatively independent regulatory agencies in each sector.

But the difficulties encountered by the Chinese government in reforming its infrastructure sector should by no means undermine its achievements so far. Few countries, if any at all, have managed a smooth transition from the era of state-owned monopolistic enterprises to one of competitive market players. China is no exception there. ★

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