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PRC infrastructure: A lot done, a long way to go

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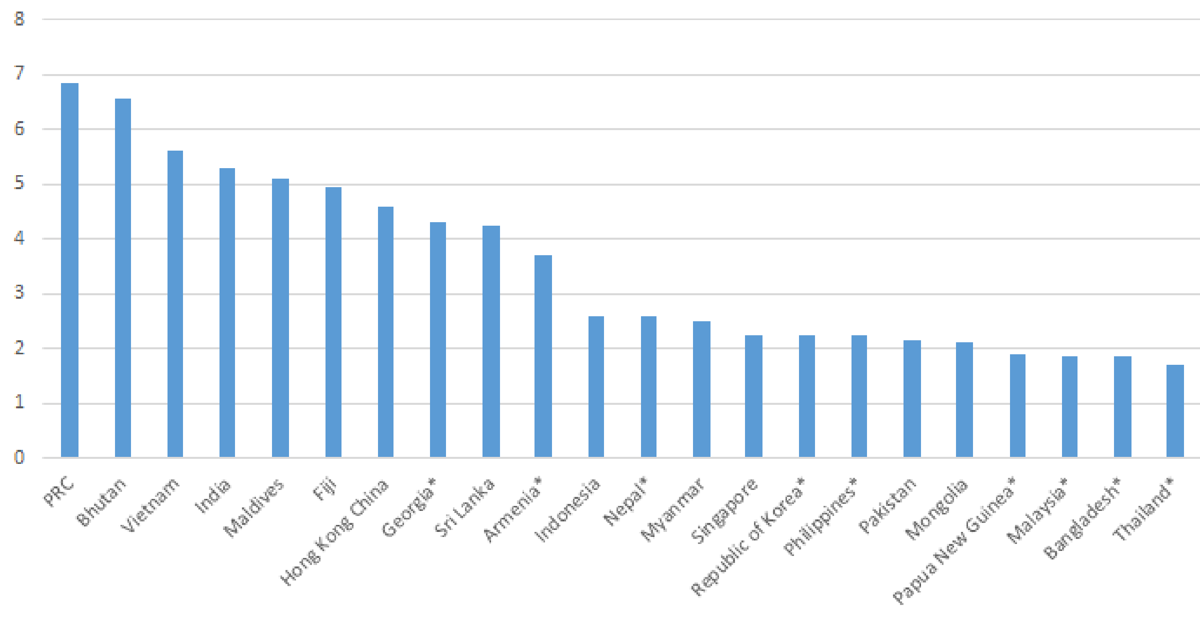
It is well known the People's Republic of China (PRC) is a heavyweight when it comes to infrastructure investment. ADB estimates that on average from 2010 to 2014, the PRC invested 6.8% of GDP in infrastructure—defined here as transport, energy, telecommunications, and water and sanitation infrastructure.

The PRC's level of infrastructure investment is the highest among the 22 developing Asian countries for which estimates could be assembled. Most other countries in developing Asia have infrastructure investment rates below 3% of GDP – less than half the PRC's. And this despite the infrastructure in many of these countries being in much poorer shape.

In dollar terms, the PRC invested an estimated $686 billion in the four infrastructure sectors in 2015. This is more than double the rest of developing Asia combined, and well ahead of all other countries. The US, whose economy is 50% larger than the PRC's, invested much less.

No matter how you look at it, the PRC is a prolific builder of infrastructure.

Figure 1: Average Budget + PPI Infrastructure Investment Rate, various years (% of GDP) [1]



The PRC's push in infrastructure development is not a new phenomenon. The country has been investing heavily in infrastructure for over two decades now, since the early 1990s.

Spending so much, so consistently on infrastructure has yielded immense benefits for the PRC. It has lowered transport and production costs, enabling the country to become the world's factory.

It has also significantly improved the lives of millions of its citizens, more than 99% of whom now enjoy access to electricity, while over 98% percent now have access to an improved water supply.

But these high levels of infrastructure investment also beg the question: Is the PRC over-investing in infrastructure?

The answer is no, for the simple reason that the country's infrastructure investment needs are and will continue to be large.

Given the PRC's projected growth rate (which is assumed to decline in the coming years) as well as projected changes in population, urbanization, and economic structure, ADB estimates that the PRC will need to invest $753 billion a year in 2016–2020.

The "gap" between the PRC's current investment and needed investment is $68 billion a year, or about half a percentage point of its projected GDP.

Investment needs are even larger when climate change is considered. Not only does infrastructure need to be adapted to cope with changes caused by sea level rise or a greater frequency of extreme weather events, it can also reduce greenhouse gas emissions by shifting toward cleaner energy sources and more efficient modes of transport.

When climate change is accounted for, the estimated infrastructure investment gap for the PRC rises to $151 billion, or 1.2 percentage points of projected GDP.

An even starker picture of the PRC's future infrastructure needs emerges when it is compared with developed countries. More than two-fifths of the PRC's roads remain unpaved, compared to just 2% of roads in the US and Europe.

Similar gaps are evident in other types of infrastructure. Electricity generation capacity in the PRC is 1.03 kilowatts per capita, 46% below the OECD average in 2014.

Urban infrastructure is another concern. Beijing's population of about 20 million is served by about 500 km of rail lines, or about 25 km of rail per million people.

Compare that to Tokyo, with close to 70 km of rail per million people, or London, with close to 200 km of rail per million people.

Given that the PRC hopes to raise its urbanization rate to 60 percent by 2020, much remains to be done on that front.

Simply put, the PRC still has come a long way, but has a long way to go. Further investment in its infrastructure will allow continued growth that is responsive and resilient in the face of climate change.

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[1] Chart includes actual budget investments except Armenia, Bhutan, Georgia, Maldives, Myanmar and Thailand which are planned or estimated budget investments. Periods covered are 2010-2013 average for Indonesia; 2010-2014 average for the PRC, Fiji and Malaysia; 2010, 2011, and 2014 average for Hong Kong, China; 2011 for Armenia, Bangladesh and Georgia; 2011-2012 average for Nepal; 2012-2013 average for India; 2011-2013 average for Maldives; 2011, 2012, and 2014 average for Singapore; 2011-2014 average for the Philippines, Sri Lanka, and Thailand and 2014 for Myanmar. Sources for the chart are Country sources; Private Participation in Infrastructure Database, World Bank; World Bank (2015a and 2015b); World development Indicators, World Bank; ADB estimates. * indicates central government only.