

ASIA'S DEVELOPMENT CHALLENGES

The Asian Century: Plausible But Not Pre-ordained

...a five lecture series
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Infrastructure: a pathway to inclusive growth

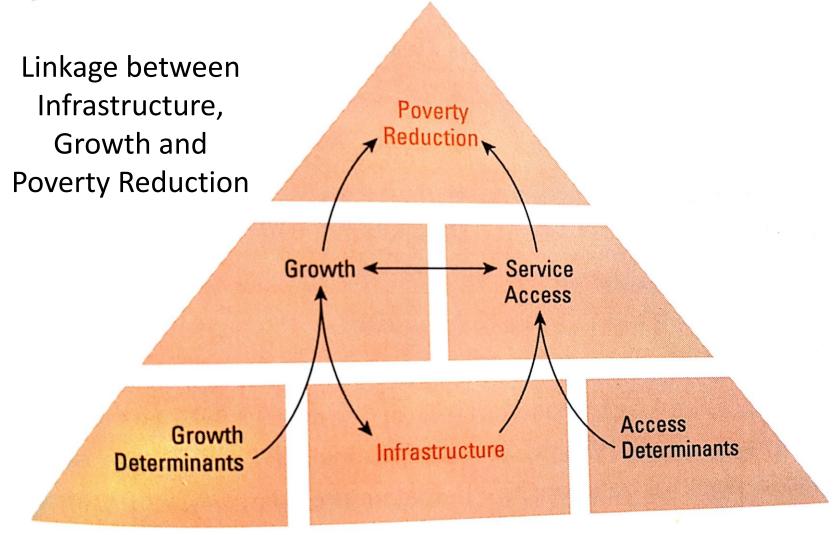




Infrastructure can draw growth, poverty reduction, and reduced inequality into a reinforcing cycle











Connecting Infrastructure, Growth, Poverty and Inequality

- First, the volume and quality of infrastructure stocks has a significant positive effect on long-run economic growth on which poverty reduction depends
- Second, it helps the poor access to basic services (
 access to water, sanitation, electricity) that improve
 their lives and income opportunities which in turn has
 a robust negative impact on income inequality.





Empirical evidence of the impacts of infrastructure development on growth, poverty reduction and reducing inequality.

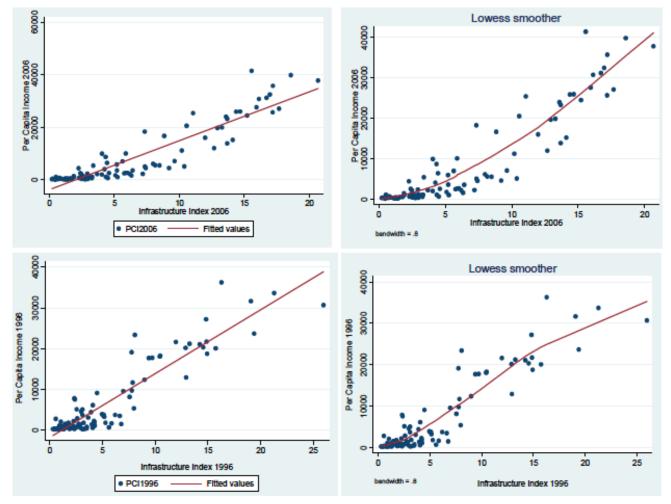
More than 100 studies conducted over the past twenty years show positive impacts







Plot of Per Capita Income and Physical Infrastructure Index

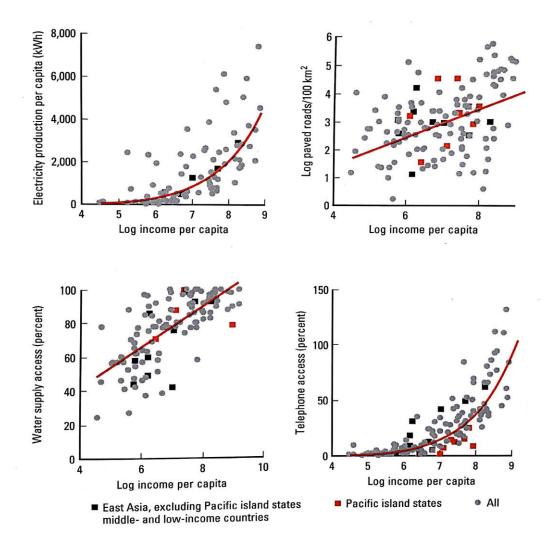








Infrastructure Outcomes and Per Capita Income levels









- In a study on Latin American infrastructure, were all Latin American countries to catch up with the region's leader in terms of infrastructure quantity and quality, their long-term per capita growth gains would range between 1.1 and 4.8 percent per annum, and their Gini coefficients would decline between 0.02 and 0.10.
- Catch up with the East Asian median country would involve even larger gains – ranging from 3.2. to 6.3 percent extra growth and 0.05 to 0.13 lower Ginis





- In Thailand, around 40% of survey respondents associated electricity with increases in income.
- In India, poverty rates were lowest for households near good roads and with electricity, and highest for households with neither (ADB 2004).





 In the Lao PDR, all-weather road access lowered the incidence of poverty by around 6 percentage points (Warr 2005).

• In Viet Nam, poor households living in rural communities with paved roads had a 67% higher probability of escaping poverty than those in communities without paved roads (Glewwe et al. 2002).





 In Indonesia, 64% of women who lived near a paved road received antenatal care by a medically trained midwife, compared with 38% of those living near a nonpaved road.



GLOBAL COMPETITIVENESS INDEX

Basic requirements subindex

Pillar 1. Institutions

Pillar 2. Infrastructure

Pillar 3. Macroeconomic environment

Pillar 4. Health and primary education

Efficiency enhancers subindex

Pillar 5. Higher education and training

Pillar 6. Goods market efficiency

Pillar 7. Labor market efficiency

Pillar 8. Financial market development

Pillar 9. Technological readiness

Pillar 10. Market size

Innovation and sophistication factors subindex

Pillar 11. Business sophistication

Pillar 12. Innovation

Key for factor-driven

economies

Key for efficiency-driven

economies

Key for innovation-driven economies

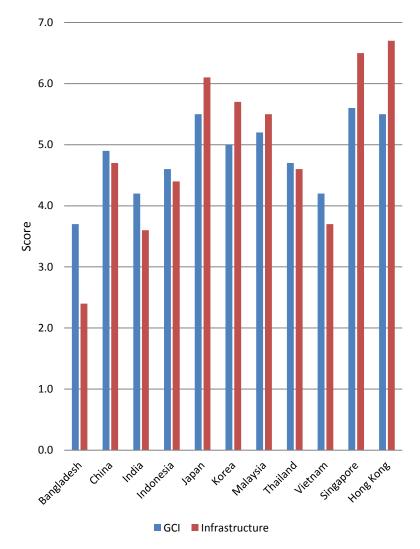


2nd pillar:	Infrastructure25%
A. Transport i	nfrastructure50%
2.01	Quality of overall infrastructure
2.02	Quality of roads
2.03	Quality of railroad infrastructure®
2.04	Quality of port infrastructure
2.05	Quality of air transport infrastructure
2.06	Available airline seat kilometers*
B. Electricity	and telephony infrastructure50%
2.07	Quality of electricity supply
2.08	Mobile telephone subscriptions*1/2
2.09	Fixed telephone lines*1/2





Global Competitive Index 2014-2015					
	G	CI	Infrastructure		
	Score (1-7)	Rank (out of 144)	Score (1-7)	Rank (out of144)	
Bangladesh	3.7	109	2.4	127	
China	4.9	28	4.7	46	
India	4.2	71	3.6	87	
Indonesia	4.6	34	4.4	56	
Japan	5.5	6	6.1	6	
Korea	5.0	26	5.7	14	
Malaysia	5.2	20	5.5	25	
Thailand	4.7	31	4.6	48	
Vietnam	4.2	68	3.7	81	
Singapore	5.6	2	6.5	2	
Hong Kong	5.5	7	6.7	1	
Source: GCR	2014-15				

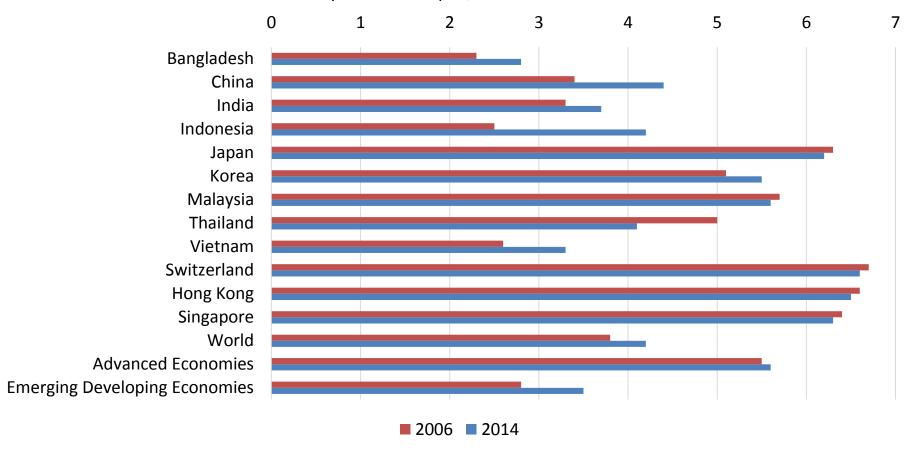






Quality of Overall Infrastructure (2014 and 2006)

1=extremely underdeveloped; 7=extensive and efficient

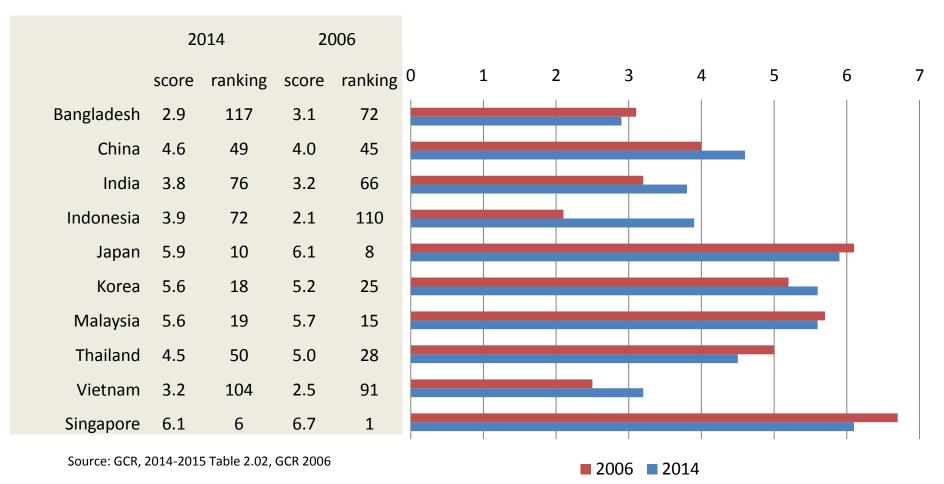


Source: WEF, Global Competitiveness Report, 2014-2015, Table 2.01





Quality of Roads
1=extremely underdeveloped; 7=extensive and efficient

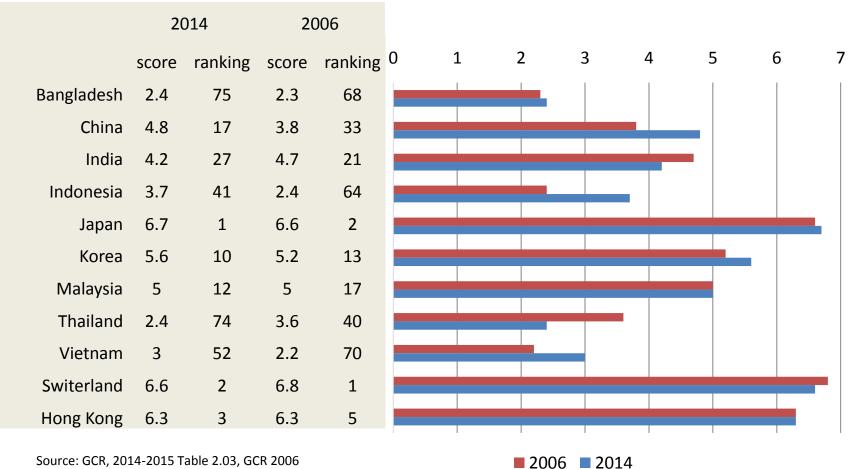


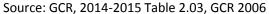




Quality of Railroad Infrastructure

1=extremely underdeveloped; 7=extensive and efficient



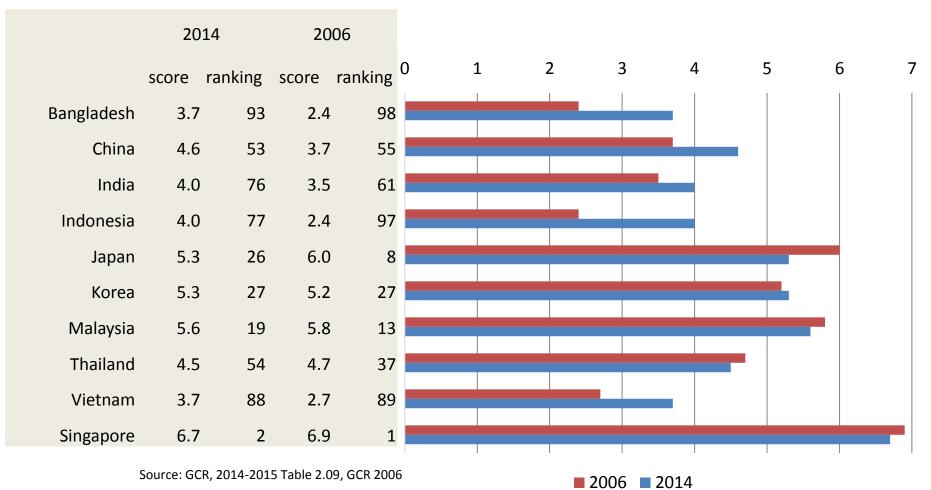






Quality of Port Infrastructure

1=extremely underdeveloped; 7=extensive and efficient

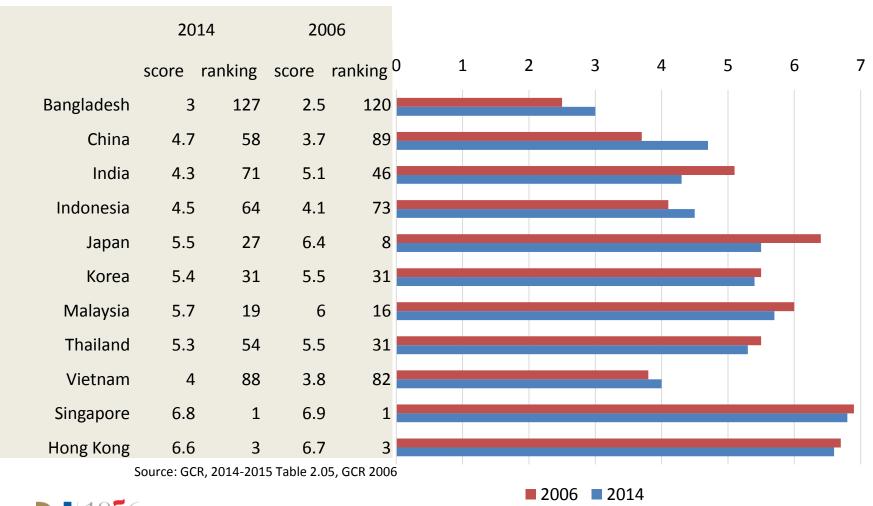






Quality of Air Transport Infrastructure

1=extremely underdeveloped; 7=extensive and efficient







Quality of Infrastructure (2014)								
	1=lowest; 7=highest; /Rank out of 144							
	Overall	Roads	Railway	Power	Air	Electricity		
Bangladesh	2.8/130	2.9/117	2.4/75	3.7/93	3.0/127	2.5/124		
China	4.4/64	4.6/49	4.8/17	4.6/53	4.7/58	5.2/56		
India	3.7/96	3.8/76	4.2/27	4.0/76	4.3/71	3.4/103		
Indonesia	4.2/72	3.9/72	3.7/41	4.0/77	4.5/64	4.3/84		
Japan	6.2/9	5.9/10	6.7/1	5.3/26	5.5/27	6.3/25		
Korea	5.5/23	5.6/18	5.6/10	5.3/27	5.4/31	5.5/44		
Malaysia	5.6/20	5.6/19	5.0/12	5.6/19	5.7/19	5.7/39		
Thailand	4.1/76	4.5/50	2.4/74	4.5/54	5.3/37	5.1/58		
Vietnam	3.3/112	3.2/104	3.0/52	3.7/88	4.0/87	4.2/88		
Source: GCR 2014								





Quality of Infrastructure (2006)							
	1=lowest; 7=highest; /Rank out of 125						
	Overall	Roads	Railway	Power	Air	Electricity	
Bangladesh	2.3/103	3.1/72	2.3/68	2.4/98	2.5/120	1.6/121	
China	3.4/65	4.0/45	3.8/33	3.7/55	3.7/89	3.9/79	
India	3.3/69	3.2/66	4.7/21	3.5/61	5.1/46	3.1/97	
Indonesia	2.5/96	2.1/110	2.4/64	2.4/97	4.1/73	3.5/90	
Japan	6.3/8	6.1/8	6.6/2	6.0/8	6.4/8	6.9/3	
Korea	5.1/29	5.2/25	5.2/13	5.2/27	5.5/31	6.1/24	
Malaysia	5.7/19	5.7/15	5.0/17	5.8/13	6.0/16	5.8/33	
Thailand	5.0/30	5.0/28	3.6/40	4.7/37	5.5/31	5.5/39	
Vietnam	2.6/91	2.5/91	2.2/70	2.7/89	3.8/82	3.5/88	
World Average	3.8	3.7	2.9	3.7	4.5	4.5	
Switzerland	6.7/1		6.8/1				
Singapore	6.6/2	6.7/1	5.7/9	6.9/1	6.9/1	6.6/11	
Hong Kong	6.4/5	6.3/6	6.3/5	6.6/3	6.7/3	6.7/8	
Emerging Developing							
Economies	2.8						
Advanced Economies	5.5						
Source: GCR 2006-7							

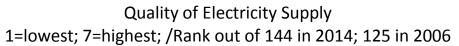


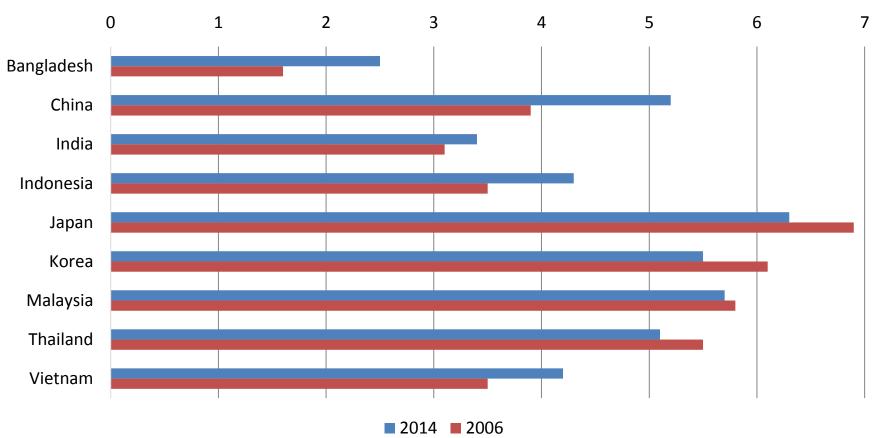


Quality of Electricity Supply 1=lowest; 7=highest; /Rank out of 144 in 2014; 125 in 2006						
	2014 2006					
Bangladesh	2.5/124	1.6/121				
China	5.2/56	3.9/79				
India	3.4/103	3.1/97				
Indonesia	4.3/84	3.5/90				
Japan	6.3/25	6.9/3				
Korea	5.5/44	6.1/24				
Malaysia	5.7/39	5.8/33				
Thailand	5.1/58	5.5/39				
Vietnam	4.2/88	3.5/88				





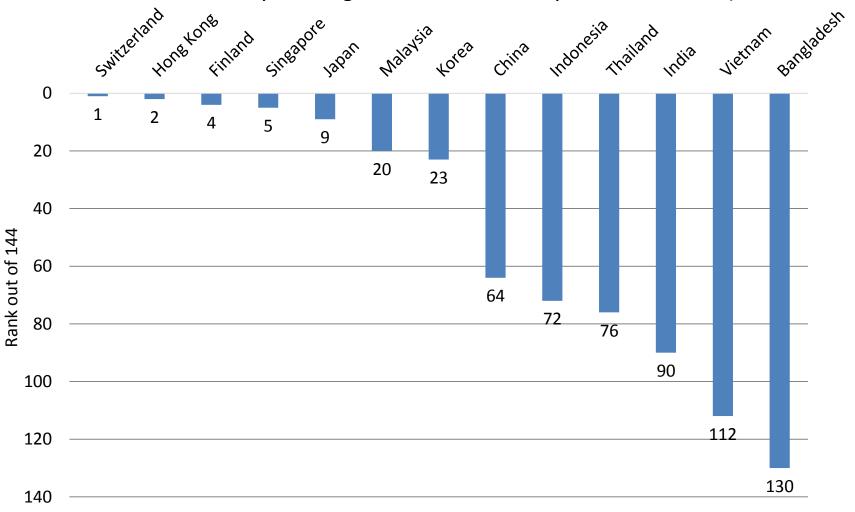








Profile of Country Ranking 2014: Overall Quality of Infrastructure)



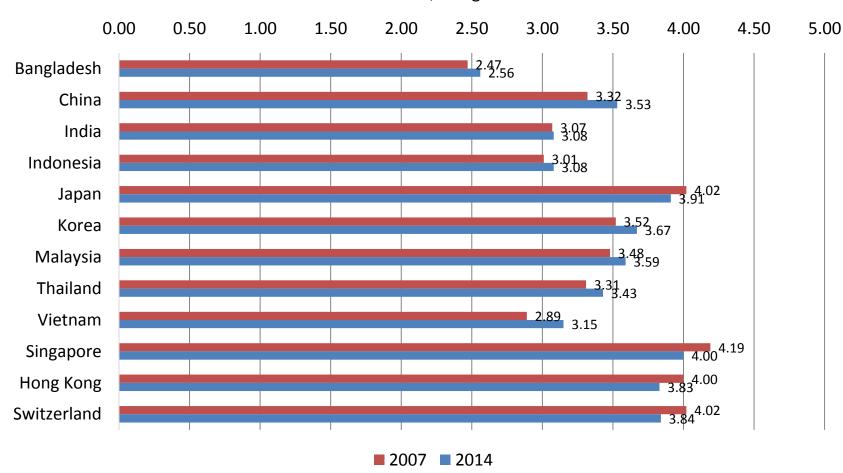
Source: WEF, GCR, 2014-2015





Logistics Performance Index

1=low; 5=high



Source: World Bank

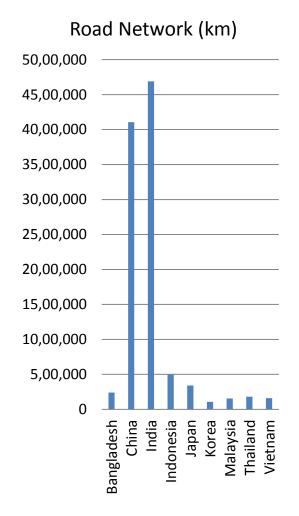


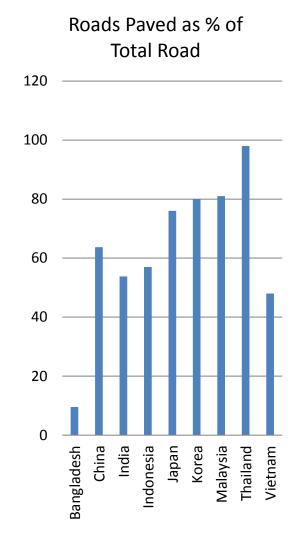


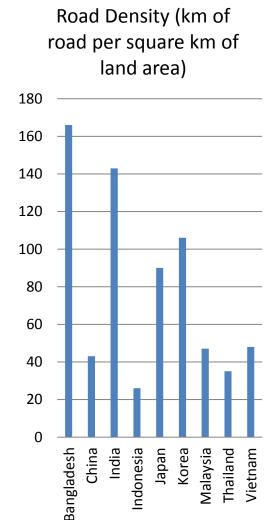
		Rc	oads			
	Road Network (km)	Roads Paved as % of Total Roads	Road Density (km of road per square km of land area)	Roads Goods Transported million tons per km	Passengers Carried million passengers per km	
Bangladesh	239,226	10	166			
China	4,106,387	64	43	5,137,474	1,676,025	
India	4,690,342	54	143	1,106,500		
Indonesia	496,607	57	26			
Japan	339,038	76	90	254,078	898,720	
Korea	105,931	80	106	12,545	112,910	
Malaysia	155,427	81	47			
Thailand	180,053	98	35			
Vietnam	160,089	48	48			
Source: www.fa	Source: www.factfish.com/statisticcs/					







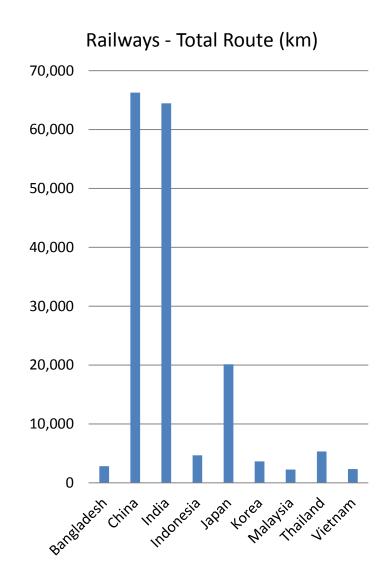








Railways						
	Goods		Passengers Carried (million			
	Total Route (km)	Transported (million tons per km)	passengers per km)			
Bangladesh	2,835	710	7,305			
China	66,298	2,518,310	795,639			
India	64,460	625,723	978,508			
Indonesia	4,684	7,166	20,283			
Japan	20,140	20,255	244,591			
Korea	3,650	9,996	21,603			
Malaysia	2,250	3,071	3,293			
Thailand	5,327	2,455	7,504			
Vietnam	2,347	3,959	4,558			
Source: World Bank, 2012						



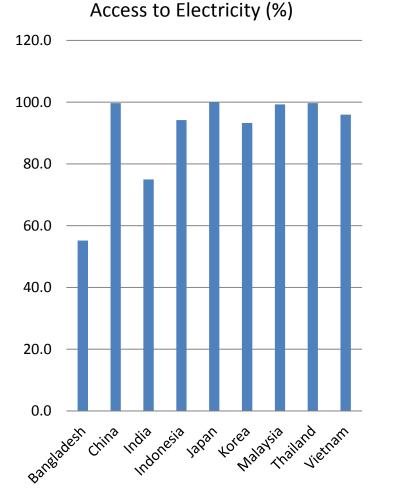


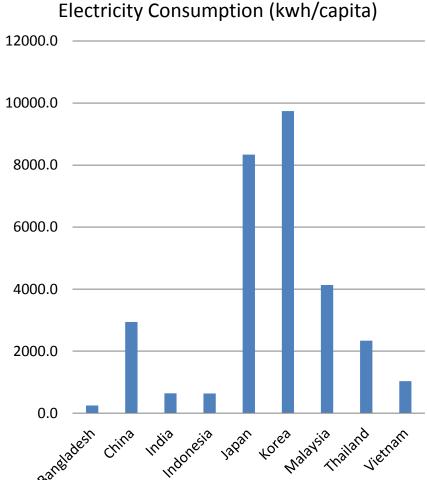


Electric Power					
	Acces	Access to Electricity (%)		Floatricity Consumption (laub (conita)	
	total	rural	urban	Electricity Consumption (kwh/capita)	
Bangladesh	55.2	42.5	88.0	247.4	
China	99.7	98.0	100.0	2943.7	
India	75.0	66.9	93.1	641.3	
Indonesia	94.2	89.4	98.0	634.5	
Japan	100.0	100.0	100.0	8337.1	
Korea	93.3	90.5	93.9	9744.0	
Malaysia	99.3	98.0	99.8	4135.0	
Thailand	99.7	97.0	100.0	2335.0	
Vietnam	96.0	94.9	98.5	1034.0	
Source: World Bank Database, 2012					







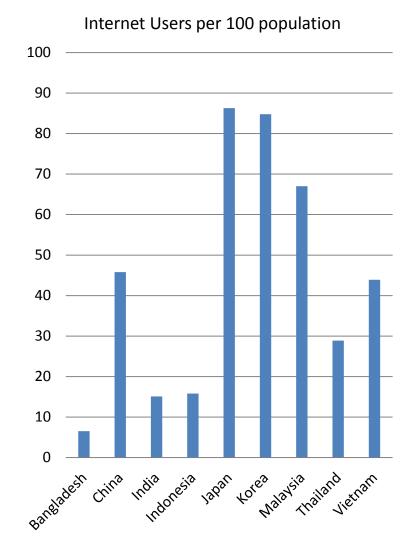






Communications					
	Mobile Telephone Subscriptions per 100 population (1)	Internet Users per 100 population (2)			
Bangladesh	67.1/128	6.5			
China	88.7/108	45.8			
India	70.8/121	15.1			
Indonesia	121.5/54	15.8			
Japan	115.2/64	86.3			
Korea	111.0/72	84.8			
Malaysia	144.7/30	67.0			
Thailand 138/34		28.9			
Vietnam 130.9/42		43.9			
1) Source: GCR 2014-2015					

Source: GCR 2014-2015
 Source: World Bank Data







Social Infrastructure Indicators						
	Hospital beds (per 1000 population) (1) Population with access to improved water source (%) (2)		Population with access to improved sanitation (2012) (%) (3)			
	2011	2012	2012			
Bangladesh	0.6	85	57			
China	3.8	92	65			
India	0.7	93	36			
Indonesia	0.9	85	59			
Japan	13.7	100	100			
Korea	10.3	98	100			
Malaysia	1.9	100	96			
Thailand	2.1	96	93			
Vietnam	2.0	95	75			

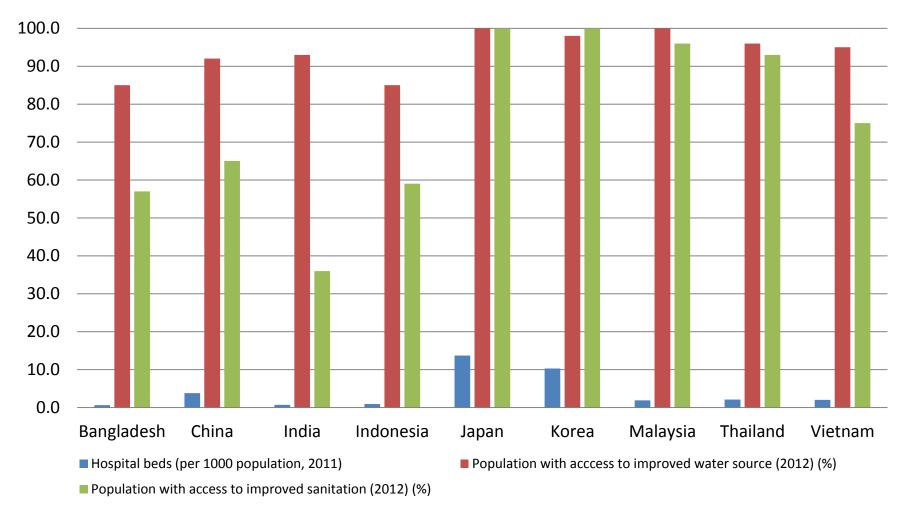
1) Source: The World Fact Book www.cia.gov

2) and 3) Source: World Bank Data





Social Infrastructure Indicators







- Huge differences across Asia. While Hong Kong (1), Singapore (2), Japan (6), Korea (14) rank among the top 15 countries (USA 12), Myanmar, Nepal and Timor Leste are among the bottom 15.
- There have been significant improvements in many places, most notably PRC, over the last 10 years but a major infrastrutcure deficit both in quantity and quality still remains.





- India's roads are congested and of poor quality: Lane capacity is low - most national highways are two lanes or less. A quarter of all India's highways are congested.
- Rural areas have poor access: Although the rural road network is extensive, some 33 percent of India's villages do not have access to all-weather roads and remain cut off during the monsoon season.





Urban centres are severely congested.

Ports are congested and inefficient.





 While some Asian countries have far better infrastructure than others, overall, the region remains below the world average in terms of both its quantity and its quality







- As land and labor costs rise in Asia's coastal regions, investors are looking to locate production facilities further inland. However, they are hampered by inadequate infrastructure connections, which raise transport costs to and from those areas.
- In the PRC, this realization has led to a shift in infrastructure policy to give greater weight to hinterland access. Railways, which are particularly suited to transporting bulk commodities, which constitute the greater share of production in inland provinces, have been prioritized.
- The shifting focus to inland regions magnifies the importance of seamless intermodal connections.





- Improved infrastructure is vital for connecting remote areas and landlocked countries with regional and global markets. The median landlocked country has 55% higher transport costs than the median coastal one.
- Transporting goods over land is around seven times more costly than over a similar distance by sea, and estimates of the elasticity of trade flows with respect to transport costs range from -2 to -3.5





- The 12 landlocked countries in Asia—Afghanistan, Armenia, Azerbaijan, Bhutan, Kazakhstan, Kyrgyz Republic, Lao PDR, Mongolia, Nepal, Tajikistan, Turkmenistan, and Uzbekistan—are especially disadvantaged.
- Most are 700–1,000 km from the nearest port; four (Kazakhstan, Kyrgyz Republic, Tajikistan, and Uzbekistan) are over 3,000 km from the sea







- Inland transport is particularly slow and expensive in South Asia. It accounts for around 88% of total trade transport costs in the subregion.
- Land border crossings are overcrowded, and greater policy attention to efficiency concerns would reduce delays and monetary costs. Complex border-crossing requirements expand possibilities for corruption and encourage informal trade.





The Urbanization Challenge

- A predominantly rural society in 1970 with just 20 percent, or 442 million people, living in cities and towns
- By 2010 Asia's urban population was 40 percent of the total—almost 1.6 billion people.
- Coming urbanization avalanche as Asia's urban population will rise by nearly 1.4 billion over the next 40 years







- The transformation of towns and cities was as uneven as it was rapid, especially living conditions. A very small number of cities were modernizing swiftly.
- Tokyo, Asia's largest metropolitan area, became a world-class business center. The young tiger economies of Hong Kong, Singapore, Taipei followed urbanoriented economic growth models.
- Korea combined high levels of economic expansion with dramatic replanning in the Seoul capital region.





- Elsewhere in Asia however, cities suffered severe degradation in livability as better employment opportunities in urban areas stimulated an influx of migrant workers that overwhelmed city services.
- Accompanied by an explosive growth of private automobile use and inadequate public transportation infrastructure





- Migrants poured into often illegal—and now endemic—slum and squatter settlements.
- In most of the larger metropolises of Asia, some 25–30 percent of the population live in in makeshift shacks without basic services of water, drainage, sanitation, or paved streets.





Kolkata and Seoul: a study in contrasts





Kolkata:

 Some 2.5 million people still live on the streets and in the slums, a figure virtually unchanged from 1970.

 Today, only 66 percent of the population is served by piped water, with service of only 10 hours per day on average.





 Only 26 percent of the metropolitan population is served by the sewerage system. Inadequate sanitation has considerable economic impact, both through lost workdays and other consequences of ill health.





The land title/tenancy problems of the bastis
 (even those that have been upgraded) are still
 unresolved. While residents cannot be
 removed, they have no legal rights either.





Seoul: a different story.

 Although flooded by migrants from rural areas and faced by large-scale illegal squatter settlements, Seoul dealt with its urban settlement problems through an innovative land readjustment program





- A self-financing scheme under which landowners of designated readjustment areas pooled their properties under the control of local authorities.
- The authorities then replanned them, built infrastructure, and returned a smaller but higher value piece of land to the original landowners.





- Squatters and low-income renters were offered a chance to buy very small plots or to move elsewhere in less expensive rental properties
- Full legal titles were issued for all land parcels



































Rural development and urban development are complementary

Small towns and secondary cities provide markets for rural products as well as business and social services for agricultural activities.





Challenge for policy makers: not how to stop urban growth, but how to manage transition to ensure that both rural and urban areas develop to their potential.







- Most of Asia's productive rural land is already in use. It cannot increase to a level sufficient to provide jobs for the larger rural population that would exist in the absence of urbanization. Issue of rural underemployment.
- On average, urban productivity is higher than rural productivity and so offers potential gains both for rural migrants and for national economies.
- PRC has recognized this and has adopted an urbanization strategy to absorb surplus labor from rural areas into urban areas. However, PRC's experience has also pointed to the importance of having an effective social policy for migrants.





Cities of the future

 Asia's city-centric future implies huge increases in energy consumption and carbon emissions in the absence of a new direction. The region's long-term competitiveness—and its social stability—could depend in large part on the quality and efficiency of new urban developments.





- With 84 percent of Asian GDP generated in towns and cities, four major risks to be managed for successful urbanization.
- Growing inequality in cities; unmet expectations of the rapidly emerging middle class; poorly planned infrastructure and land use spiraling into high-cost, high-carbon environments; and consequences of climate change and other natural hazards.





- Investments in Infrastructure:
- China has consistently invested over 10% (sometimes even 12-14%) of its GDP over the past three decades
- Malaysia, Thailand, Vietnam 7% +
- India, by contrast, too little, too late. Till about 2005, only about 3-4% of GDP. Increased to 5-6% over the past decade. Twelfth FYP: expected 10%





Broad Conclusion:

 Asia has invested heavily in infrastructure; enhanced both stock and quality but NOT ENOUGH

 Infrastructure still a very major challenge in Asia





Huge Infrastructure Investment needs in Asia:

About \$8 trillion over the next decade





 Financing is not the binding constraint: availability of bankable infrastructure Projects is

Adequate Preparation of Projects is key

 Public Private Partnerships: adequate riskreturn sharing mechanisms





- Land acquisition, Resettlement, Protection of Rights
- Hardware and software aspects
- Environmental and Social Assessment
- Financial and Economic Viability of Projects
- Issues of Project Implementation and Management





 The critical role of the Financial Sector: to mobilize Asian savings for Asian infrastructure investments and also to enhance inclusion





 Asians are significant savers (about 30% plus) and has huge unmet demands for financing (for infrastructure, for example)

 But, these savings are not intermediated in Asia; but through capital markets in the advanced economies.







- Emerging Asia's finance sector is still largely bankdominated, with bank assets at 126 percent of GDP, compared with stock market capitalization 69 percent and debt market capitalization 50 percent.
- In the debt market, public debt far outweighed private debt issuance, indicating heavy private reliance on banking finance.
- In contrast, the debt market size of the EU is almost 200 percent of GDP, of which private debt is over double the size of public debt.







- Asia intermediates a large part of its savings through markets in the US and Europe, which are generally deeper and still more efficient, robust, and liquid in spite of the Great Recession.
- Asia's foreign exchange reserves are largely invested in American and European markets.
- Asian economies hold more than \$7 trillion or over 75 percent of the world's foreign exchange reserves (excluding gold), but a very small proportion is invested in Asian capital markets.





- Institutional development in Asia's non bank sector is much weaker than that in Europe and the US.
- Innovative capital market and insurance skills are still tapped from London or New York.





 As the world moves away from a single dominant economy, it is only natural that there should be a more representative, multipolar global monetary and financial architecture.





Financial systems have three important functions:

- efficiently allocate resources;
- improve the payment system by reducing transaction costs; and
- manage risk through better transparency and corporate governance





 For Asia to succeed, the Asian financial system must evolve in ways that will perform the above functions well while managing the major risks highlighted by the Great Recession, such as shadow banking, highly toxic derivatives, the inequities and systemic externalities, and issues of moral hazard.





- Asia has a less developed financial system where the state plays too dominant a role in finance and economic life.
- Asian finance must provide long-term risk capital and funds for real sector development without the state having to underwrite huge losses. This is likely to come from major reforms in policies and institutions and greater use of technology and innovation.

•





 Specifically, there will have to be a radical transformation of financial and structural policies in tandem, in order to shift the bias that favors low-risk activities and proprietary trading toward the funding of small and medium enterprises (SME) and microfinancing, large-scale infrastructure financing, housing, and environmental protection.





 Strong equity markets can help improve the corporate governance of companies, particularly state-owned ones, by subjecting them to the market test and discipline.

 Deep and liquid bond and derivatives markets are needed both to finance long-term social infrastructure and to improve monetary and exchange rate management.





- Despite the high savings accrued from the high demographic endowment, Asia has yet to fully invest in itself.
- One of the top priorities is therefore for Asia to develop a strong asset management and pension fund industry, by allowing greater private participation and by liberalizing portfolio restrictions on the pension fund industry, so as to allow for a larger field of alternative and foreign investments.





 Well-funded pension schemes must be put in place to meet the needs of the aging population in some societies.

 Stronger pension and insurance schemes will in turn require well-developed domestic capital markets in many Asian economies.







- Development finance and policy-based financial institutions
- Long-term infrastructure projects are constrained by the limited availability of long-term funding and the governance capacity to implement and fund these projects sustainably.
- The irony is that the governance mechanisms, technology and excess savings are all available within Asia, but the financial architecture and institutions have not yet been built and the political will to make things happen has not been established.





 There is therefore a great opportunity for Asian financial institutions and centers to work together to create the long-term financial market for infrastructure that could be one of the engines of growth in both the Asian real sector and financial market.





 Creating an enabling environment for infrastructure financing, public—private partnerships and public financial markets.





Insurance

- Asia is grossly underinsured.
- Asset and liability maturity matching







- To summarize:
- A radical transformation of Asian capital markets is critical.
- Strong equity markets would promote competitiveness and enhance corporate governance.
- Investment banking and venture capital would help consolidate and restructure many industries with overcapacity and reengineer them to green market needs.





 Deep and liquid bond and derivatives markets would provide the channel for infrastructure financing.

 Further strengthening of the insurance and pension/social security funds would ensure that risk management and retirement funds are enhanced.





 Since size, scale, and clustering matter in finance, the regional integration of capital markets in Asia must deepen if Asia is to become a market maker on the same footing as the EU and the US.





LECTURE 3: INFRASTRUCTURE DEFICIT AND TRANSFORMING FINANCE

THANK YOU

