



Infrastructure for Asian Development and Integration



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Defining Infrastructure

- **A system of networks, structures, and facilities that support a society and economy**
- **Hard infrastructure = physical assets**
- **Soft infrastructure = non-tangibles that support the development and operation of hard infrastructure**

Hard Infrastructure



Soft Infrastructure

Infrastructure and Regional Cooperation

- **How many different types on infrastructure were utilized to get us all here for the NEAEF?**

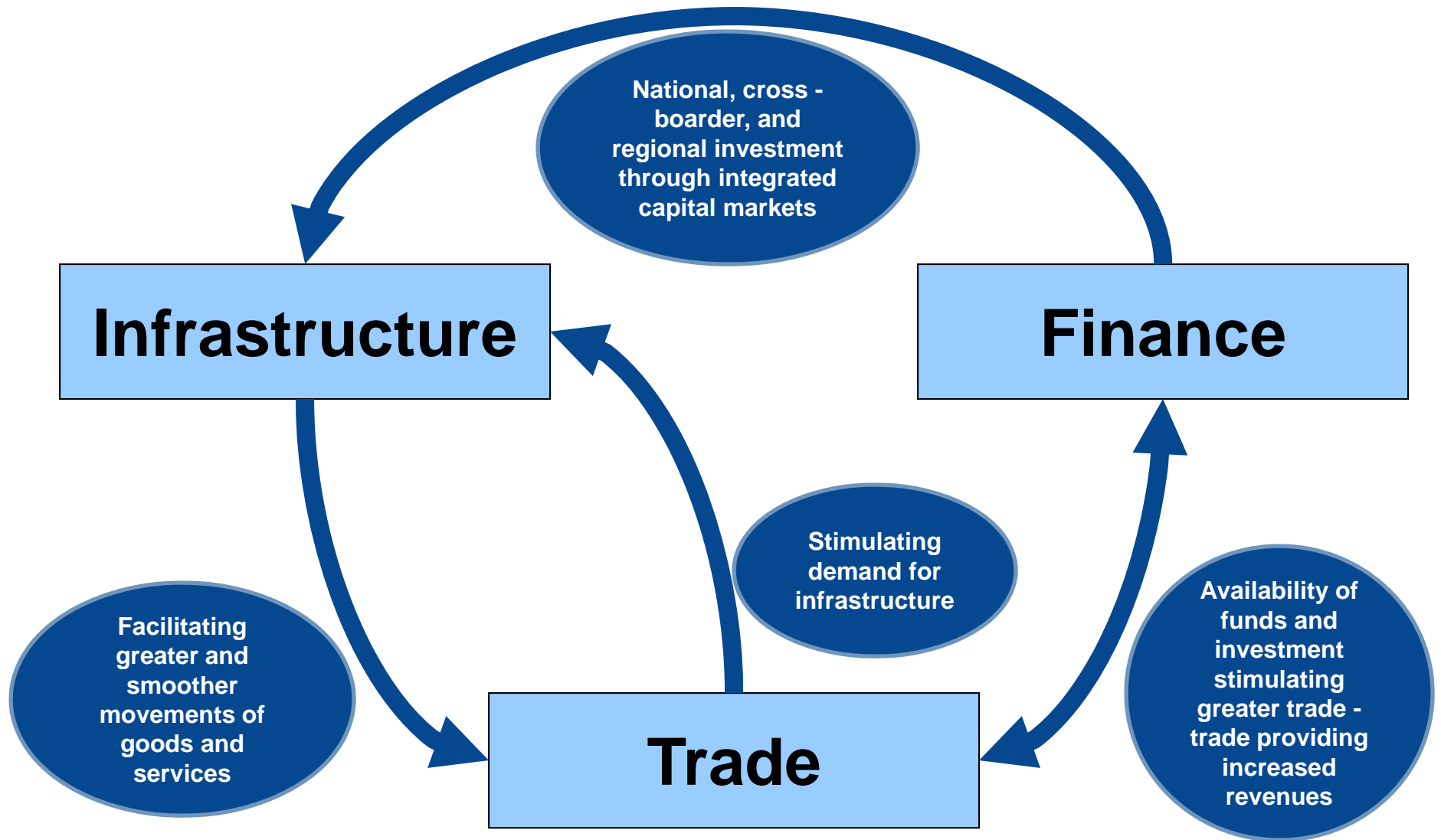
- **Hard infrastructure?**



- **Soft infrastructure?**



Linking Trade, Infrastructure, and Finance



Poverty, Basic Needs, and Infrastructure

Studies have shown transport, electricity, water and communication facilities have significant positive effects on economic growth, access to economic opportunities, and poverty reduction efforts:

- **Effective use of infrastructure explained a quarter of growth differential between Africa and East Asia and more than 40% of that between low-growth and high growth countries (Hulten 1996)**
- **In Thailand, around 40% of survey respondents associated electricity with income (Chatterjee et al 2004)**
- **Better access to roads and sanitation reduces income inequality, lowering Gini coefficients by between 0.05 and 0.13 (Calderon and Serven 2004)**
- **In India, poverty rates were lowest for households near good roads (ADB 2004)**
- **In Lao PDR all-weather road access lowered the incidence of poverty by around 6% (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)**

The Infrastructure Gap

Asia's gap in infrastructure quality and investment is one of the root causes of poverty:

1990s
along with the
telepresence

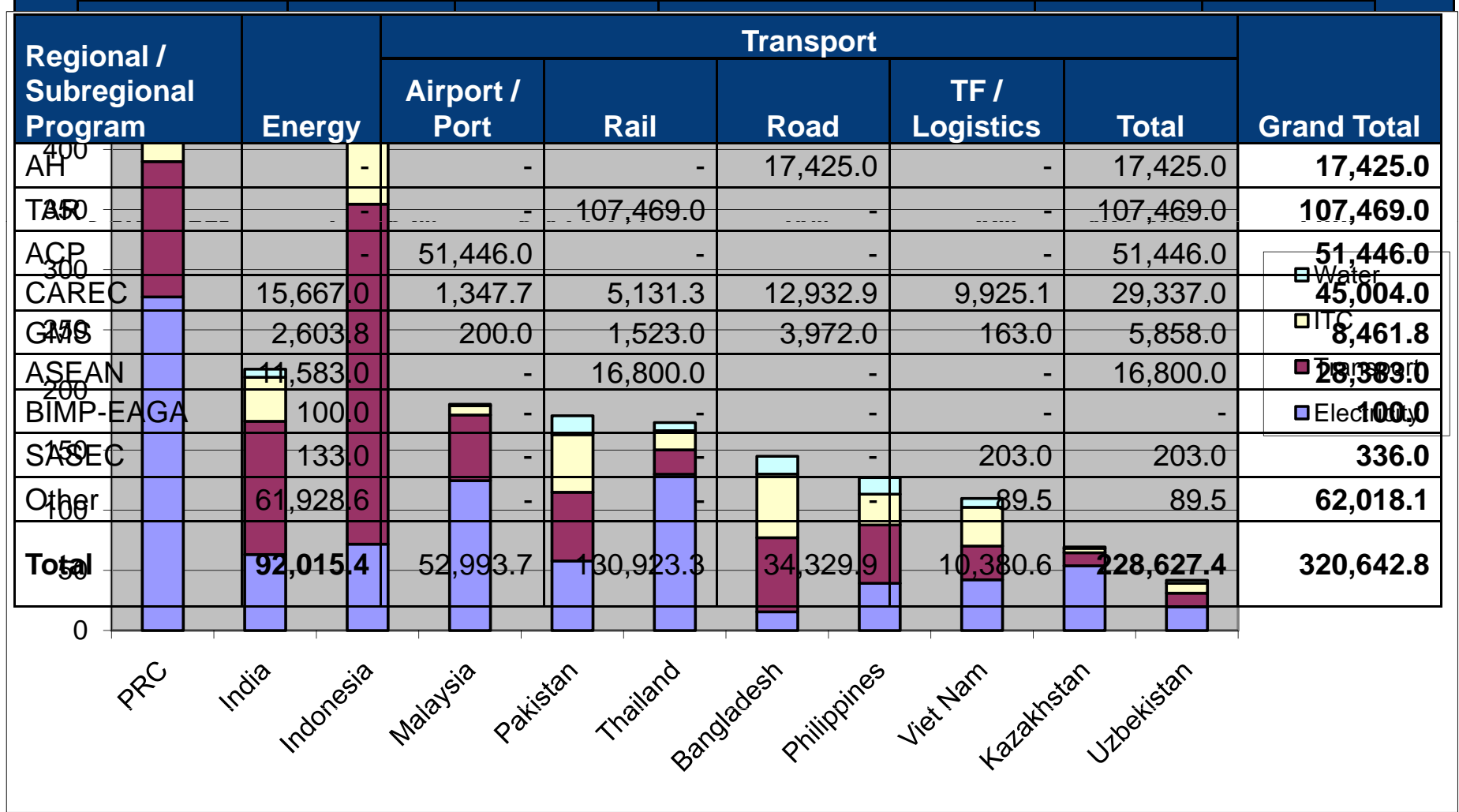


The Financing Gap

On average, Asia needs to invest about US\$750 billion per year in infrastructure (both national and regional) during 2010-2020 in the transport, communications, water, and energy sectors

Financing Needs for Asia's Infrastructure

Asia's Total Infrastructure Investment Needs by Sector 2010-2020
 Indicative US\$ Billions and Regional Scale (in US\$ Billion)



Source: Bhattacharyay (2010)

Meeting the Financing Needs

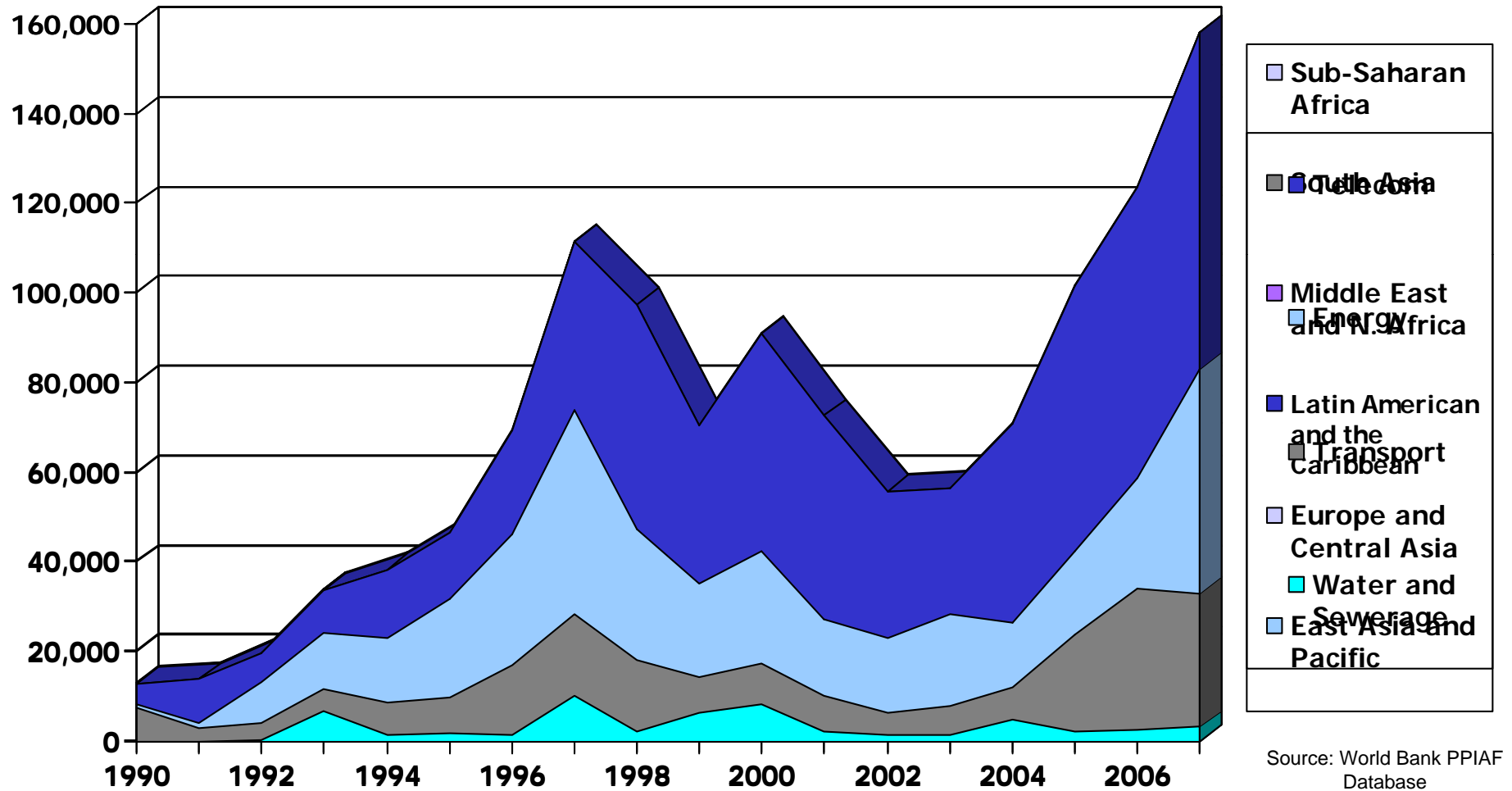
- **The region's vast domestic savings and international reserves can serve as a primary source of financing for Asia's infrastructure**
- **Strengthen national and regional local currency bond markets and intra-regional investment flows**
 - **Regional Bond Markets (e.g., ASEAN+3 Bond Market Initiative)**
 - **Asian Bond Funds (ABF)**
 - **Regional Investment Areas**
- **Identify and prepare “bankable” projects to encourage private financing involving Public-Private Partnerships (PPPs)**

Private Sector and the Financing Gap

- **The private sector will be necessary to fill remaining gaps in public funding for both Greenfield and Brownfield infrastructure projects**
- **Private sector participation is also necessary for technology, management, skills, and know-how that public sector may not possess**
- **A need for the public sector to create enabling environments for PPPs**

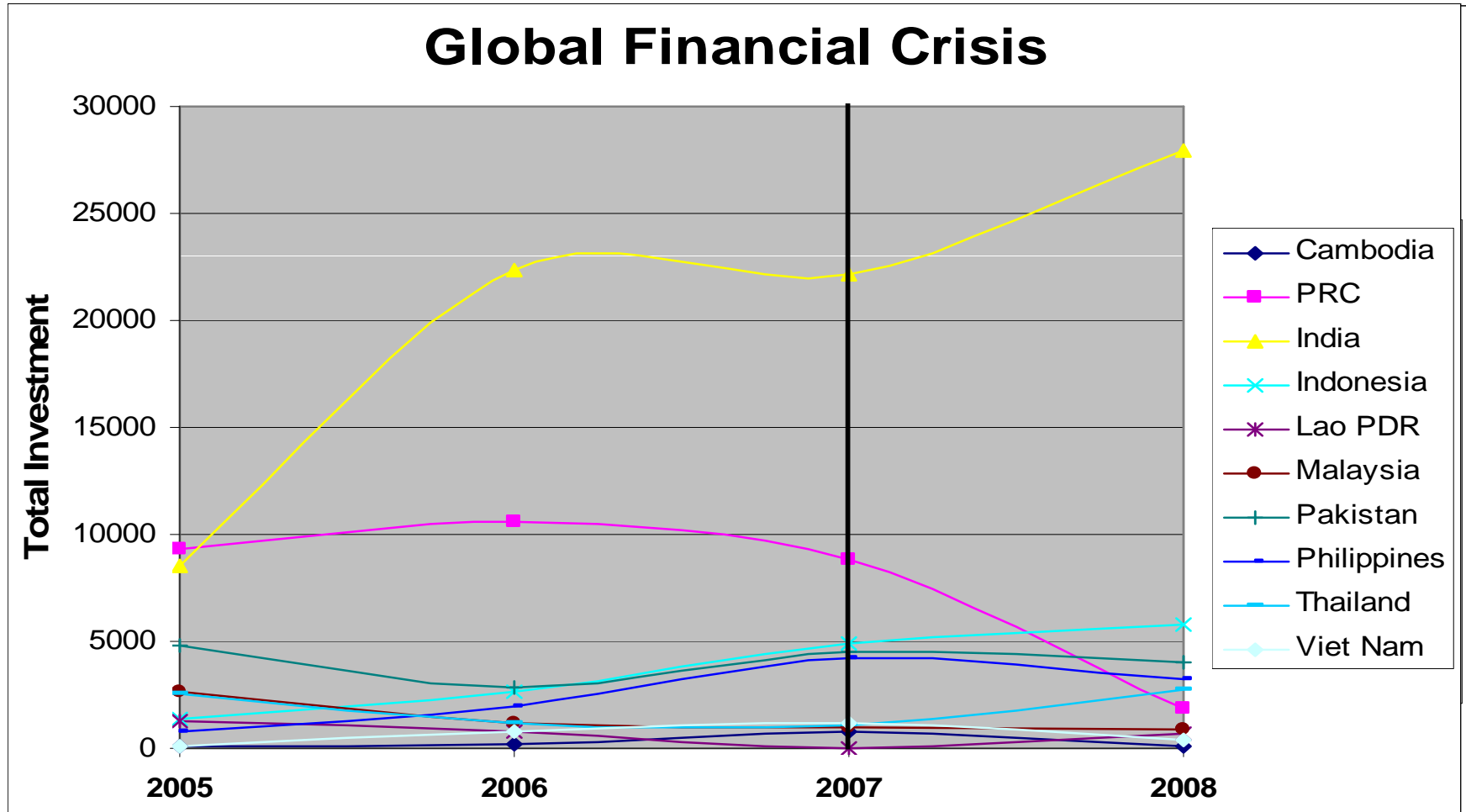
Pre-Financial Crisis Global Trends

PPPI Investment, US\$ Million



Encouraging Counter-cyclical Private Sector Investment

Total Investment in Infrastructure with Private Participation During Crisis Periods*



*In Current US\$ Million

Note: Total investment here includes investment in transport, communications, energy, and water and sewage infrastructure

Source: World Bank and PPIAF, PPI Project Database

Infrastructure Investment in Stimulus Packages of Selected Asian Economies

(US\$ billion)

Country	2008 GDP ¹	Total Fiscal Stimulus	Total Stimulus as % of 2008 GDP	Infrastructure Component of Stimulus	Infrastructure Component as % of Total Stimulus	Infrastructure Component as % of 2008 GDP
PRC	4326.19	600	13.9%	275	45.8%	6.36%
India	1217.49	60	4.9%	33.5	55.8%	2.75%
Indonesia	514.39	7.7	1.5%	1.3	16.9%	0.25%
Viet Nam	90.70	8	8.8%	4.8	60.0%	5.29%
Thailand	260.70	46.7	17.9%	30.6	65.5%	11.74%
Malaysia	194.93	2	1.0%	0.17	8.5%	0.09%
Singapore	181.95	14.6	8.0%	3.1	21.2%	1.70%
Taipei, China	385.42 ²	20.4	5.3%	16.6	81.4%	4.31%
Japan	4909.27	130	2.6%	1.5 ³	1.2%	0.03%
Korea	929.12	11	1.2%	7.8	70.9%	0.84%
Australia	1015.22	9.7	1.0%	2.3	23.7%	0.23%

¹ In Current Prices

² Converted from New Taiwan Dollars to US\$ at exchange rate for 28 January 2010 of 1TWD= 0.03117US\$

³ Amount estimated from reports in FAITC (2009) and Sugimoto (2010)

Note: Exchange rates on 28 January 2010 used when needed—<http://www.oanda.com/currency/converter/>

Source: Bhattacharyay and Detert (2010)

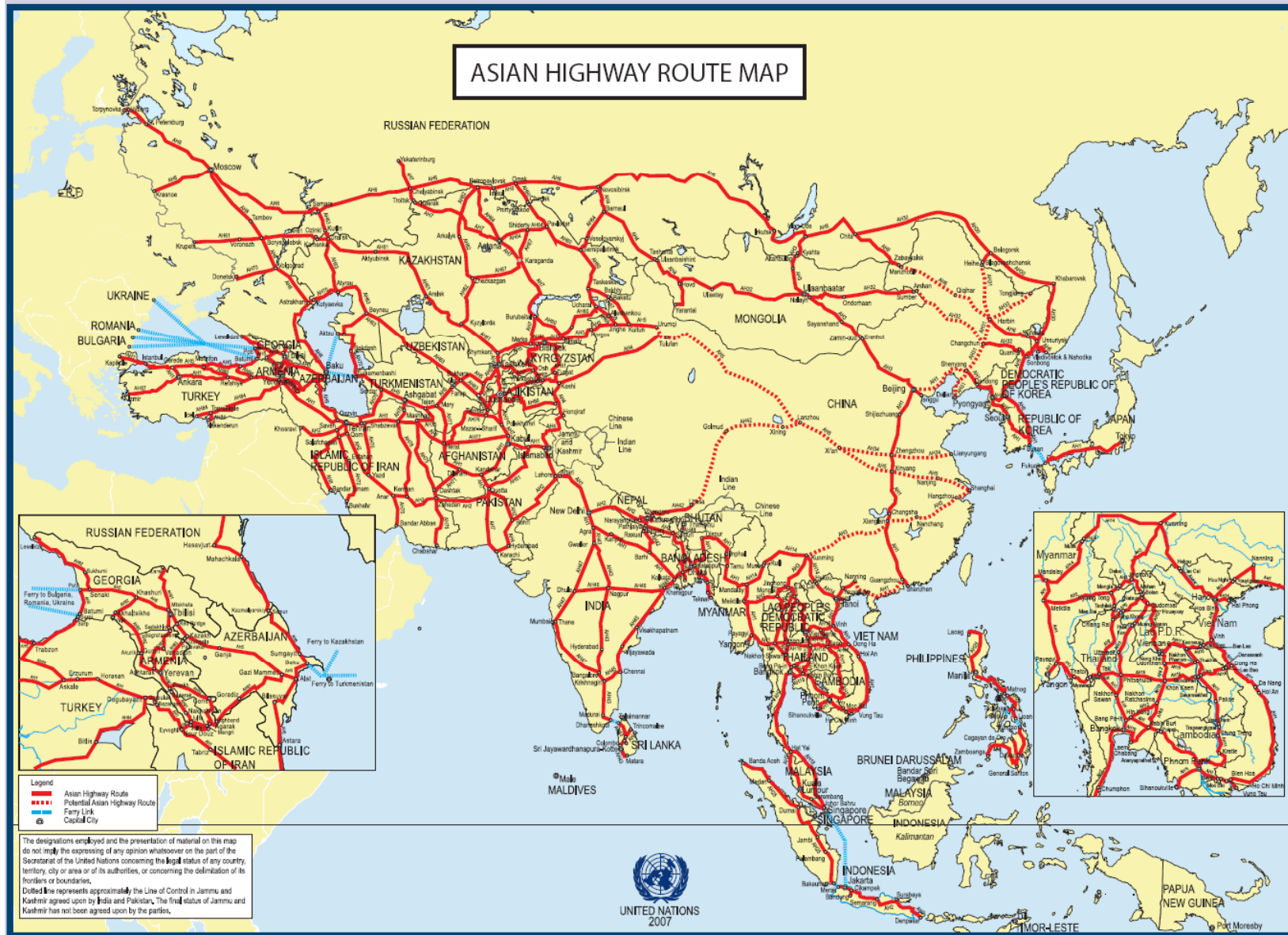
Benefits of Infrastructure Investment

Present Discounted Value of Net Gains from Transport Connectivity (2008 US\$ Billion)

Country/Region	Transport		
	2010-2020	Post 2020	Total
Developing Asia	2,723.8	5,118.9	7,842.8
NIEs	248.8	445.5	694.3
PRC	1,016.1	1,829.2	2,845.2
Indonesia	251.6	490.4	742.0
Malaysia	201.7	398.4	600.1
Thailand	206.6	425.9	632.5
Viet Nam	97.1	171.4	268.5
India	424.5	851.7	1,276.2
Central Asia	62.9	103.7	166.6
Rest of Developing Asia	62.1	124.4	186.6
Australia + New Zealand	25.6	47.1	72.7
Japan	64.9	118.7	183.6
Rest of World	182.9	437.8	620.8
Total	2,997.2	5,722.5	8,719.9

Source: ADBADBI (2009)

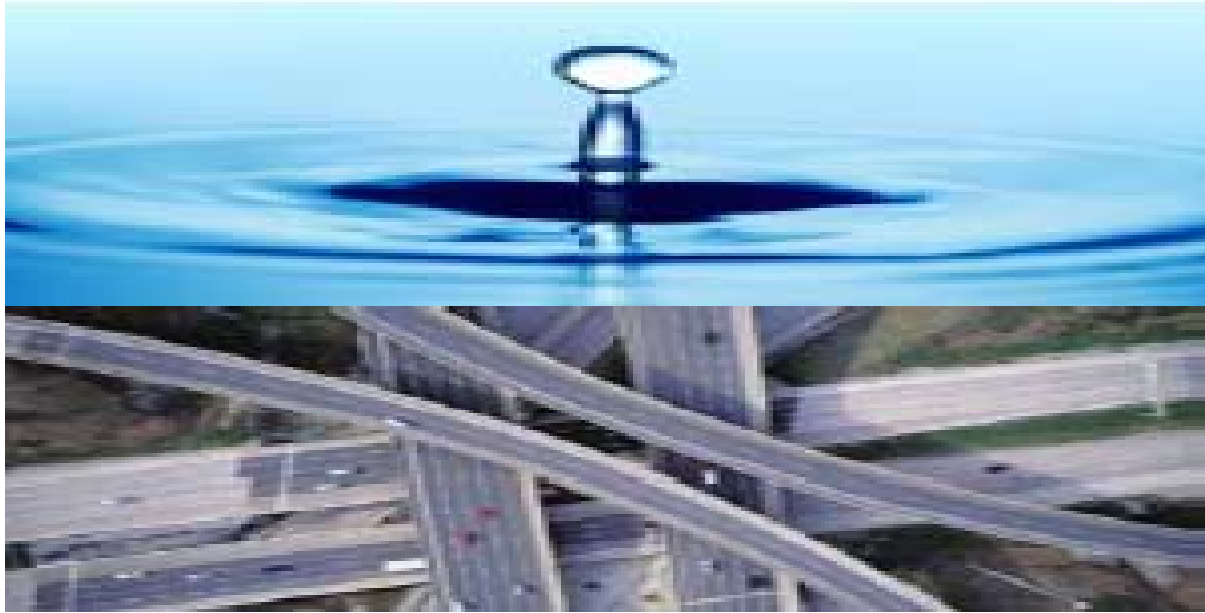
Asian Highway (AH) Network



Source: UNESCAP (2009)

Challenges for Asian Infrastructure Connectivity

- **Proper coordination and integration of national, subregional, and regional infrastructure programs**
- **Addressing the pressing needs for basic services**
- **Managing diverse levels of infrastructure, public and private experience, integration, and technical, financial, and institutional capacity**
- **Financing huge infrastructure investment needs**
- **Ensuring growth and investment are sustainable and inclusive**
- **Dealing with negative externalities**
 - **Negative spillover and risks proliferating across borders**
 - **Environmental, Social, Economic, Financial, etc.**



Thank you!

