Overview of East Asia Infrastructure Trends and Challenges

Christian Delvoie. Director, Knowledge Strategy Group, The World Bank
Until September 2008: Director, Sustainable Development, East Asia and Pacific Region













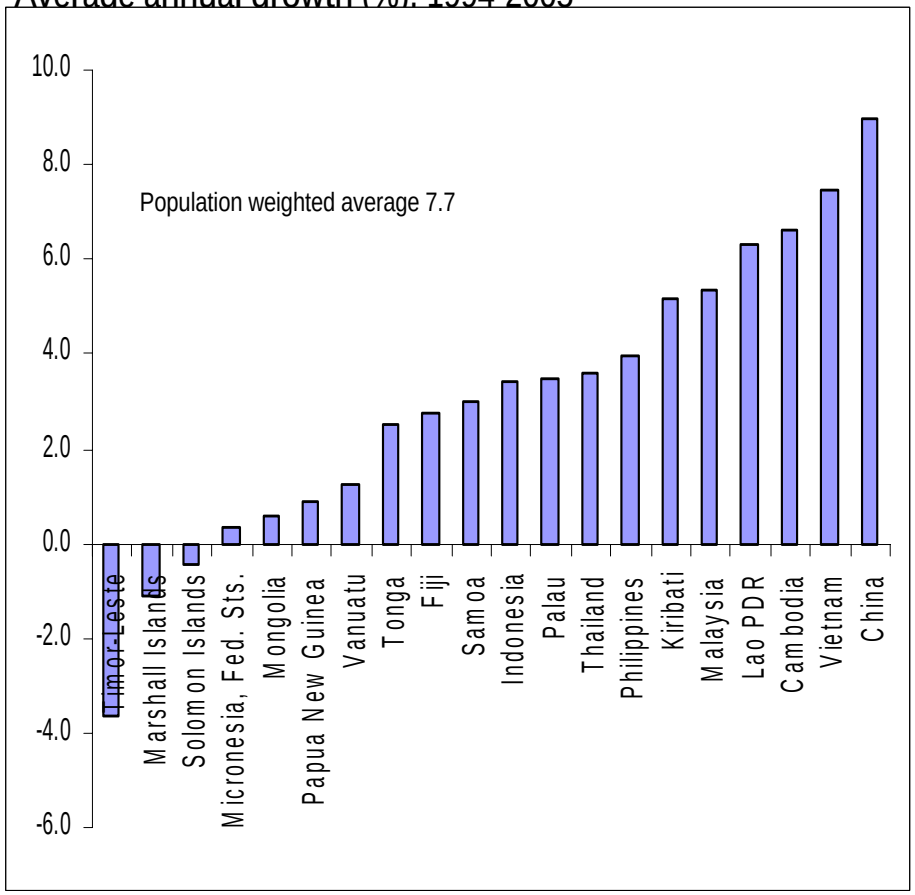
East Asia Infrastructure: An Evolving Environment

- **The growth story**.
  - Strong growth and significant progress in poverty reduction, supported by clear focus on infrastructure investments
  - Rapid urbanization and rising incomes
  - Increasing regional integration
- **The development challenges.**
  - Growing social inequality with Rural-urban and Coastal-inland divide
  - New governance models, with increased decentralization
  - Increasing pressures on natural resources and the environment
- **Financing.**
  - Large needs but global financing is not the binding constraint
- **Involving the need for a new sustainable development model**

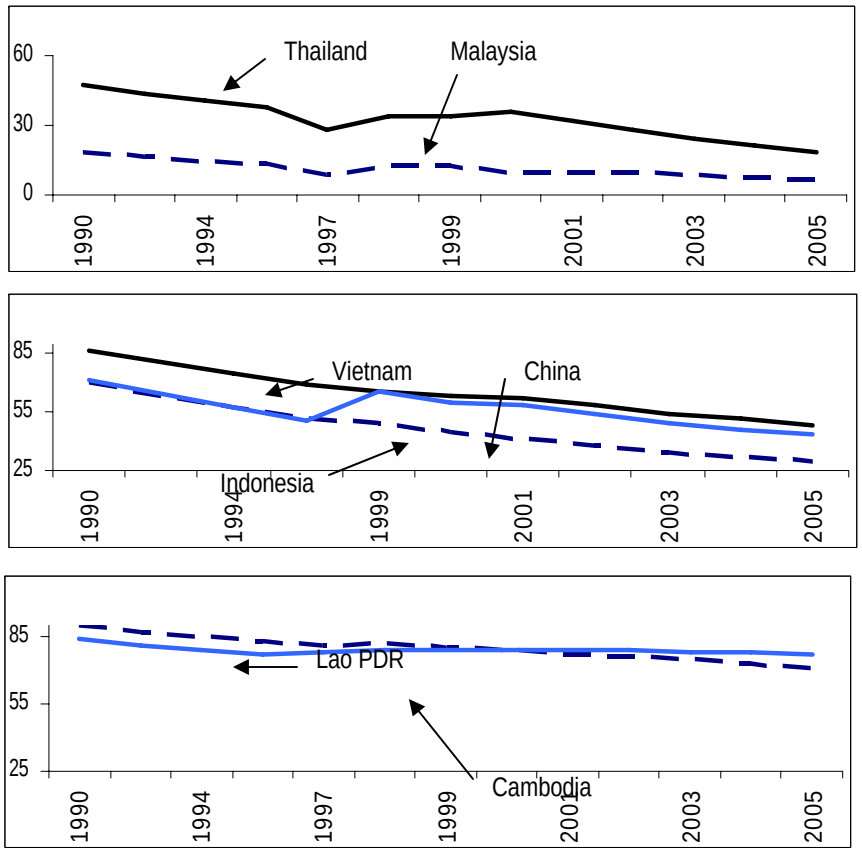
The Story

Strong aggregate growth, supporting impressive poverty reduction

250 million lifted out of poverty in the last 5 years



Source: World Development Indicators, 2005

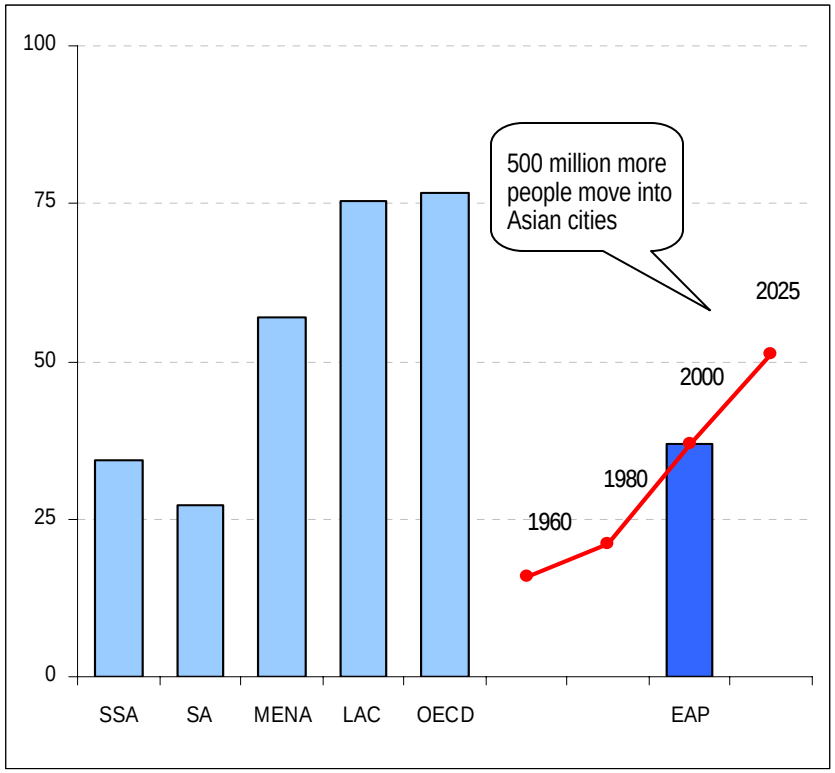


Source: *Source*: Connecting East Asia: A New Framework for Infrastructure, The World Bank

Urbanization as a new driver for productivity and infrastructure

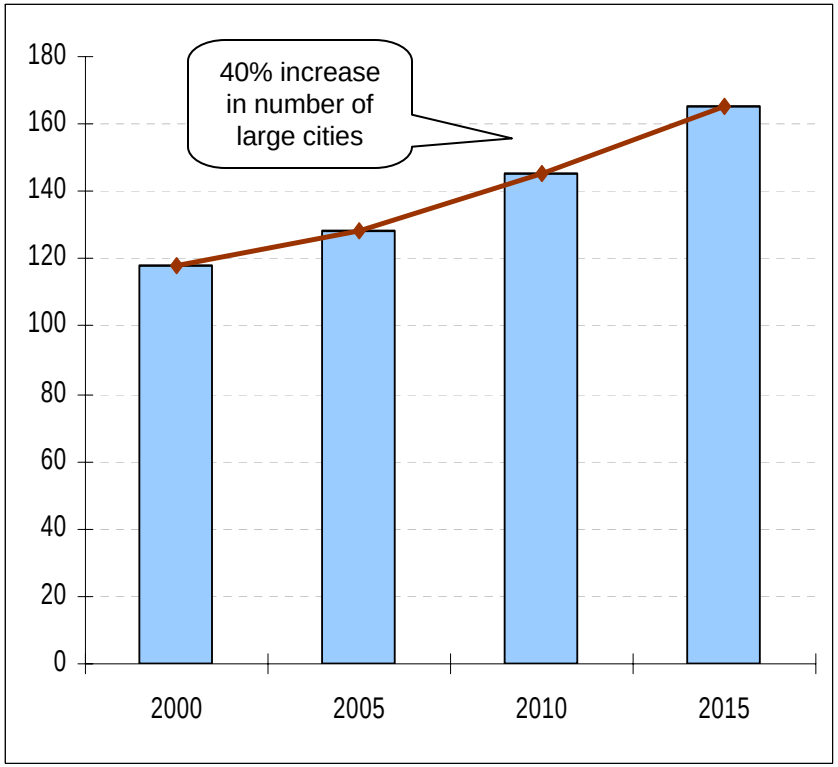
… in 20 years, East Asia will be an urban region

Urban population (% total population)



Source: World Development Indicators; United Nations World Urbanization Prospects

Growth in number of cities over one million inhabitants

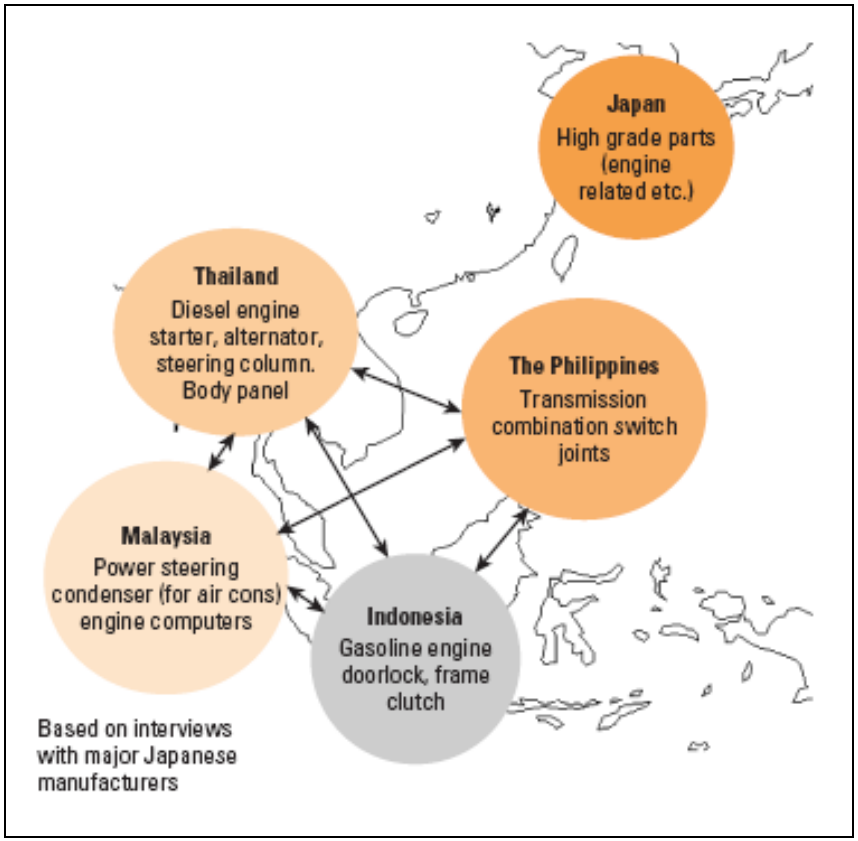


Source: United Nations World Urbanization Prospects

Increased regional interdependence

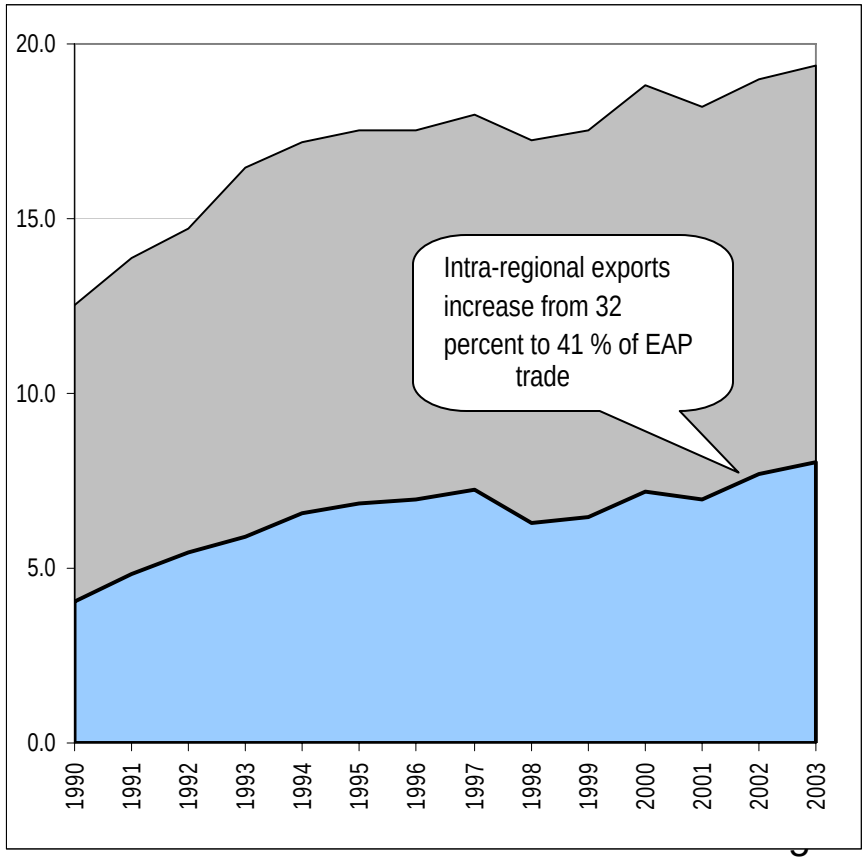
East Asian development model has been based on global and regional integration

Interdependence of auto-manufacturing in ASEAN



Source: Nomura Research Institute, Reprinted in *Connecting East Asia: A New Framework for Infrastructure*, The World Bank

Emerging East Asia (China, ASEAN, newly industrializing economies, Mongolia), share of world exports (%)



Source: IMF, Direction of Trade Statistics

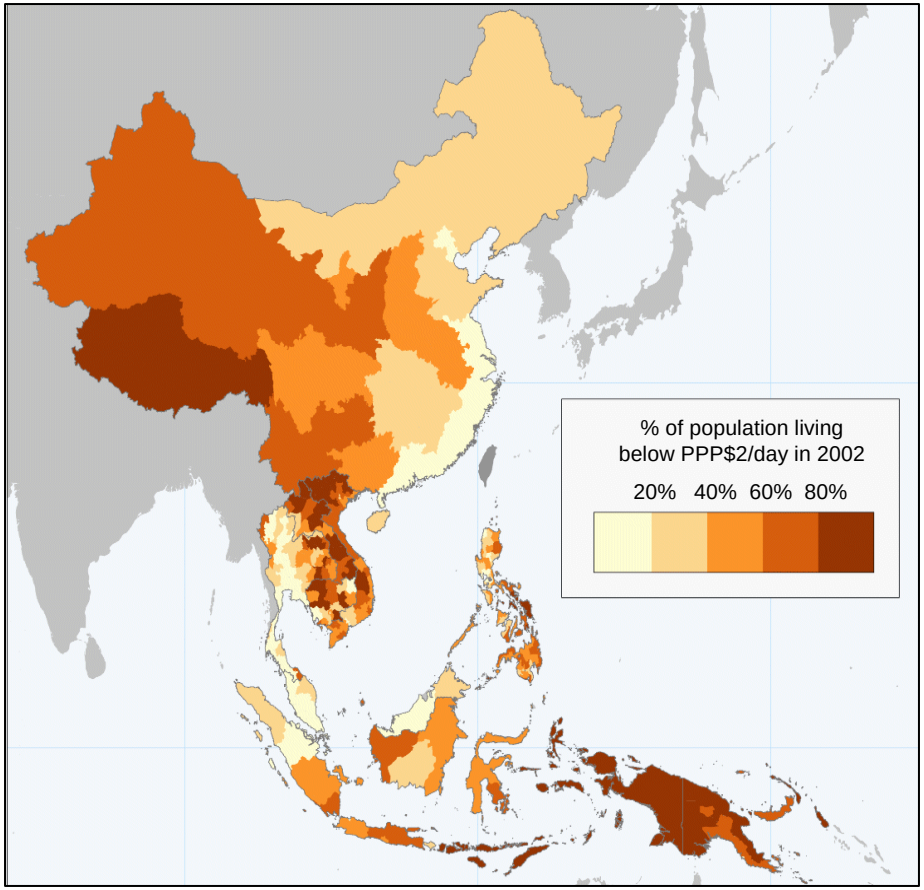
The Challenges

Inequality – A contrasted picture…

Poor provinces in the hinterland, but concentration of the poor along the coast

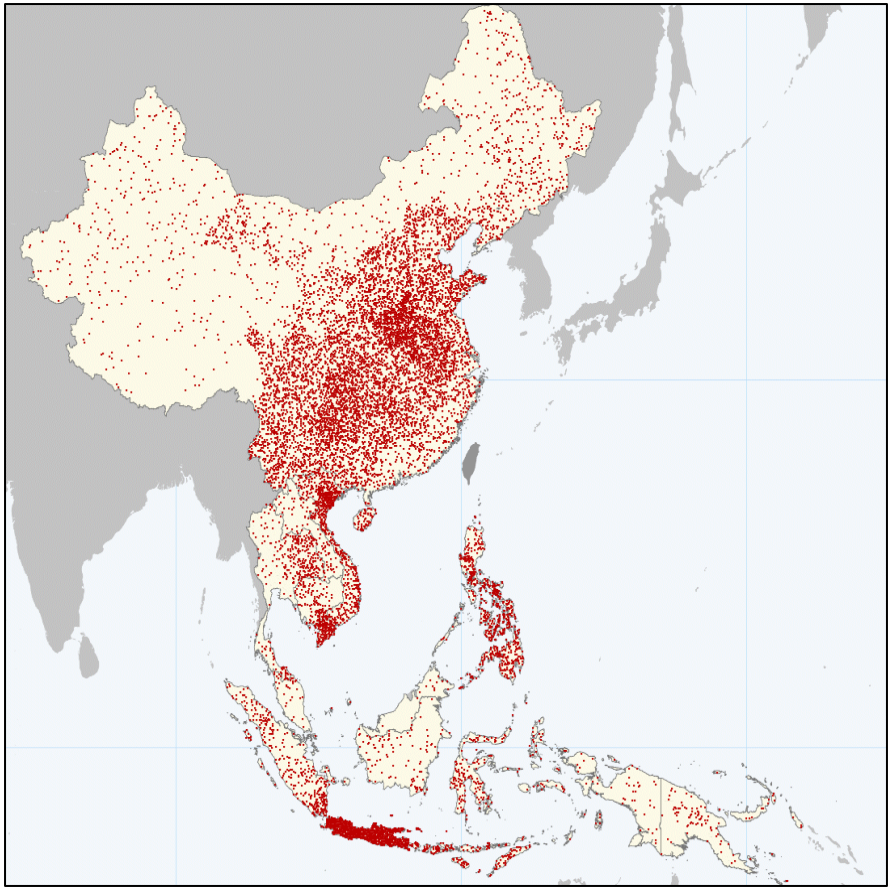
Making the next challenge one of domestic integration

Percentage population living below $2 / day (by region)



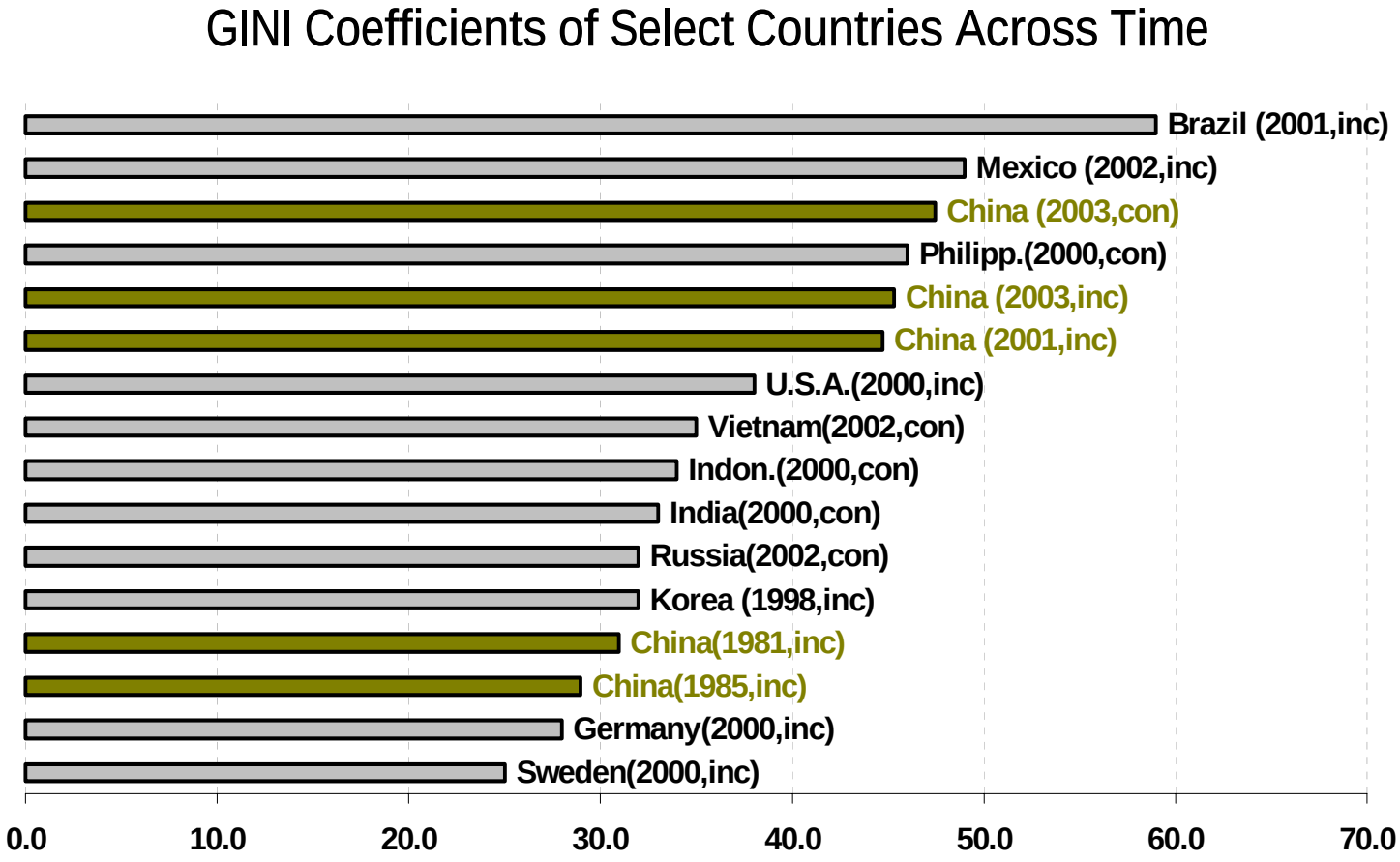
Source: Poverty Reduction and Economic Management Unit, The World Bank, 2004

Percentage population living below $2 / day (each dot = 50 000 people)



Source: Poverty Reduction and Economic Management Unit, The World Bank, 2004

And inequality is high and growing

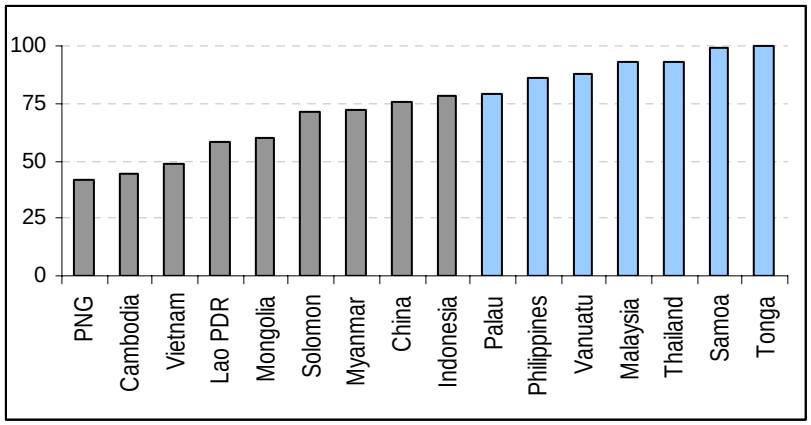


Sources: World Development Report, 2006; Ravallion and Chen (2004); World Bank estimates from NBS household data.

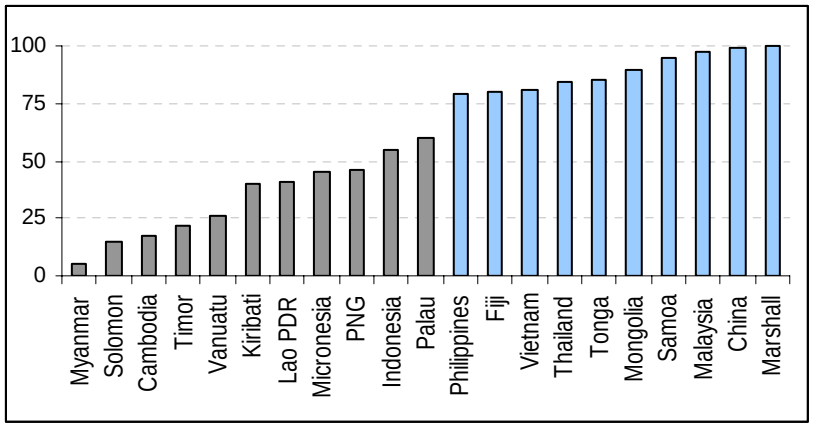
…with significant variation in infrastructure service access

Service Access (Bars in blue = outcomes above low and middle income country average)

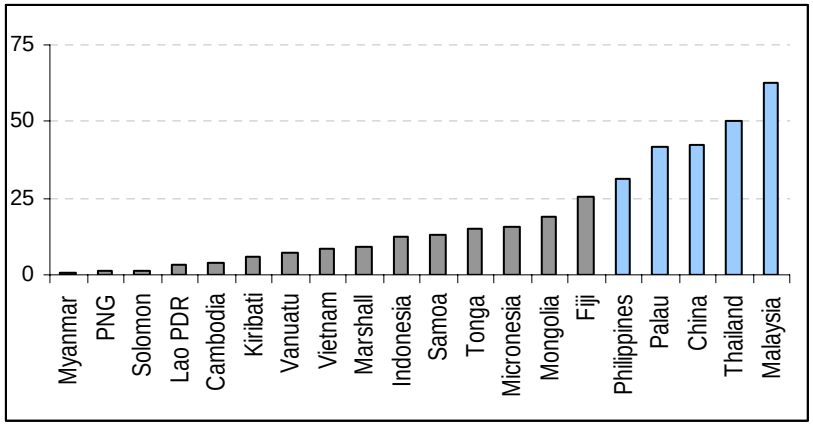
Water supply access (%)



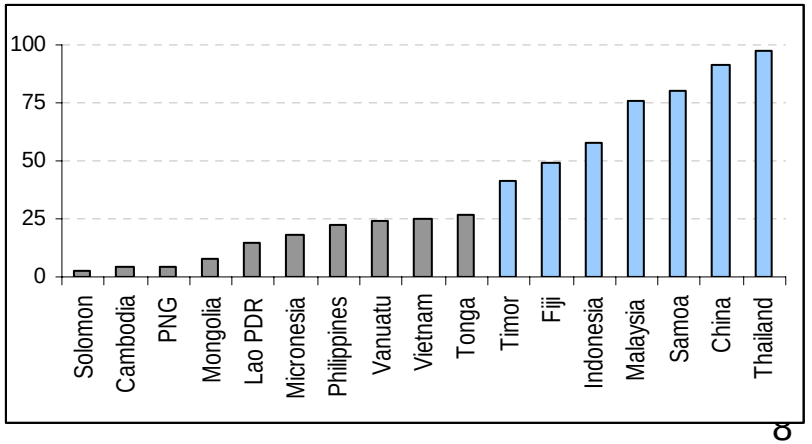
Electricity access (%)



Telephone access (subscribers / 100 inhabitants)



Percentage paved roads



Source: World Development Indicators; IEA; Connecting East Asia: A New Framework for Infrastructure, The World Bank

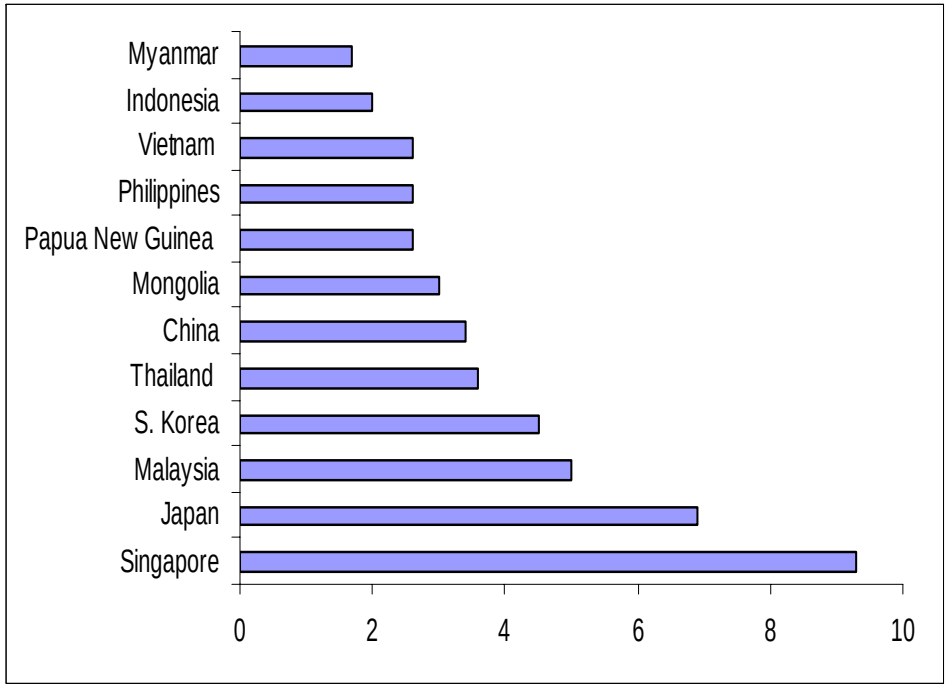
The governance challenge

A host of new actors are coming to the fore...

Key issues:

- Democratization
- Increased complexity in service delivery
- Corruption
- Decentralization

Corruption Perception Index 2004



Source: Transparency International

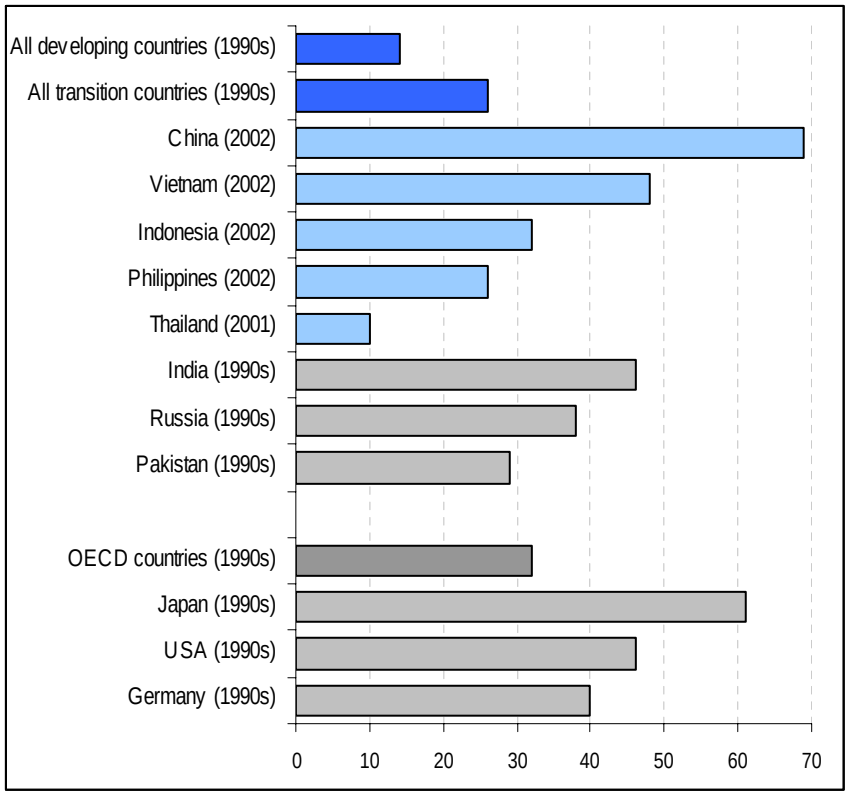
Note: The CPI score ranges between 10 (highly clean) to 0 (highly corrupt).

...with increased decentralization as a key trend

Key challenges:

- Fragmentation
- The missing middle
- Implementation of integrated vision
- Capacity & leadership at local level
- Unclear regulation frameworks

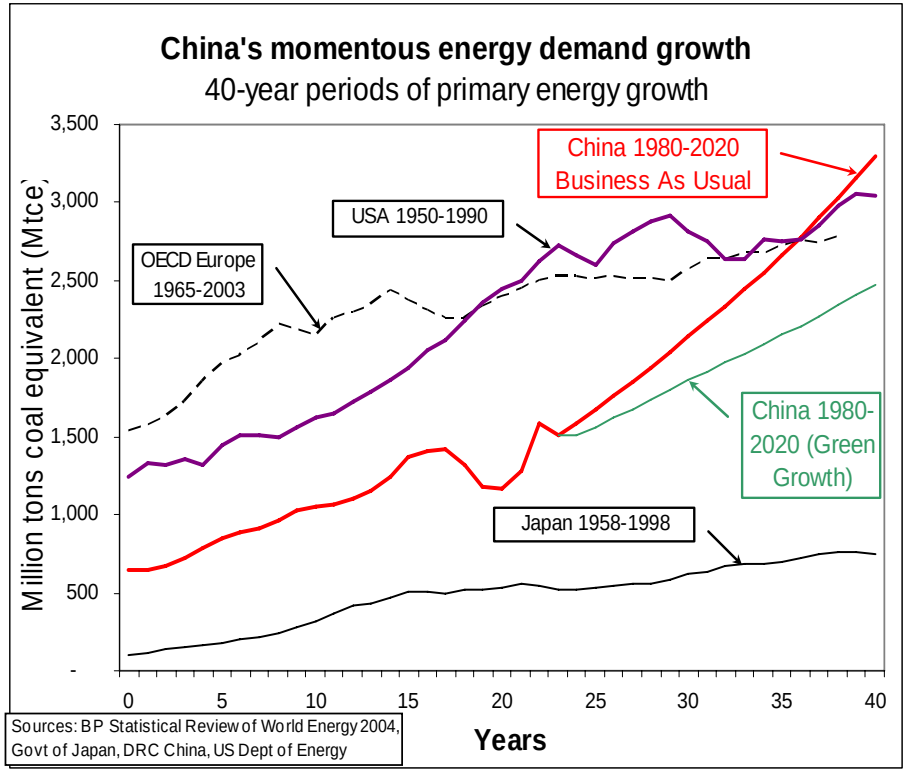
Expenditure decentralization – sub-national expenditure (% total national expenditure)



Source: East Asia Decentralizes—Making Local Government Work, The World Bank

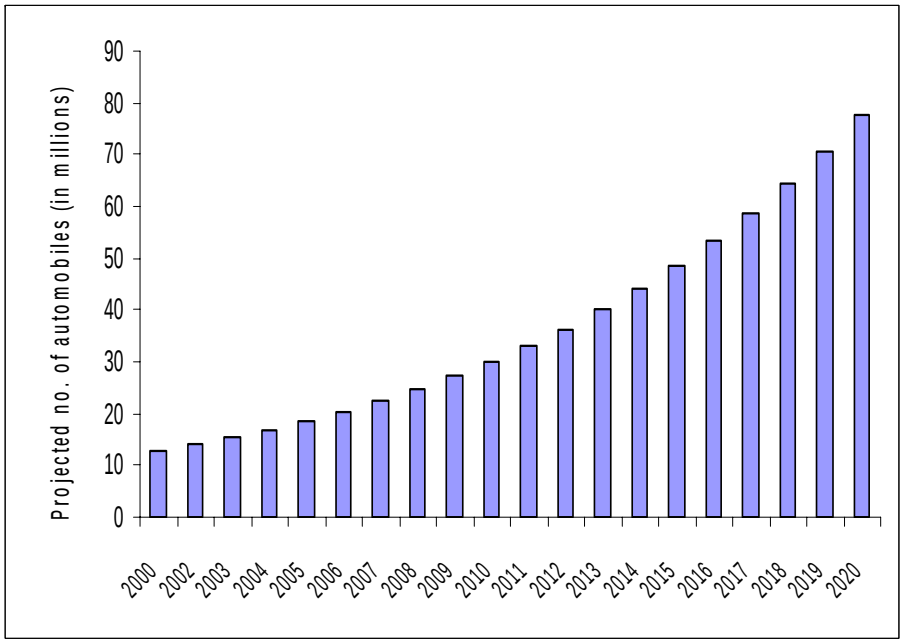
Increasing pressure on natural resources and the environment

Business as usual will result in doubling energy consumption by 2020



Source: East Asia Energy Unit, The World Bank

Projected no. of automobiles, China
2000 - 2020

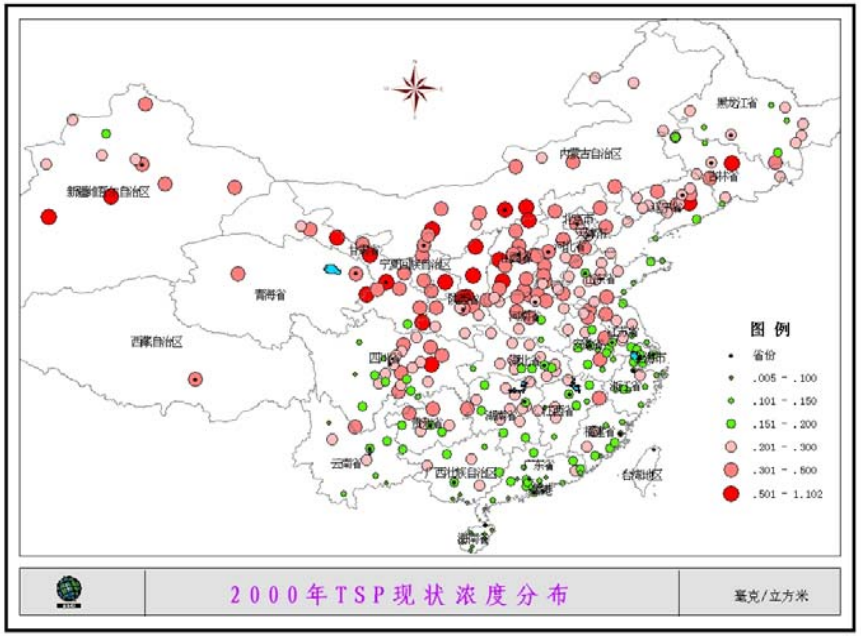


Source: International Energy Agency, 2005; World Bank Staff Estimates

With severe negative consequences on …

...air quality

PM Concentrations (ug/m³)

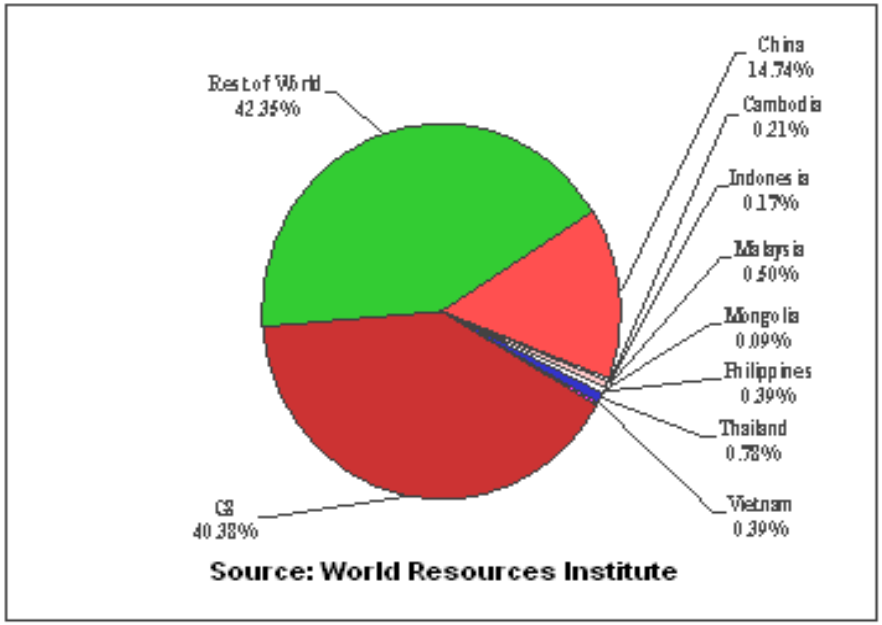


Source: ERI

- Of the 30 most air-polluted cities in the world, 20 are in China

and climate change

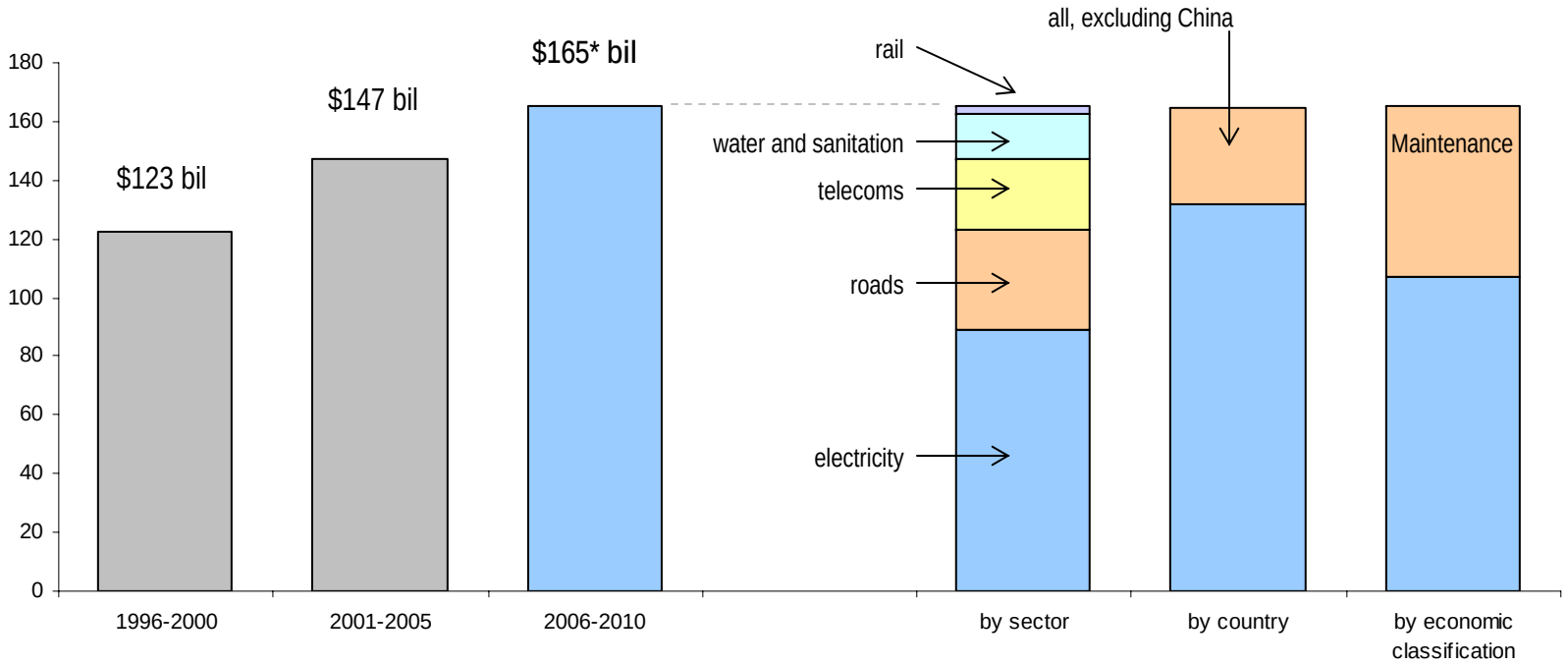
Countries' and Country Groups' Share in Global GHG Emissions, 2000



- EAP accounts for 18% of the world total greenhouse gas (GHG) emissions, with China alone contributing 15%.

East Asia's infrastructure needs are large and increasing…

East Asia, estimated infrastructure expenditure, actual and projected, 1996 – 2010 ($ billion / year)



•Based on econometric simulations consistent with projected regional growth, and efficiency prices. Due to data limitations, the simulation excludes a number of key infrastructure services, notably ports and airports, and all but major roads.

•*Source:* Connecting East Asia, A New Framework for Infrastructure, ADB/JBIC/World Bank Report, 2005

At the macro level, financing is not a constraint in East Asia …

Selected macroeconomic indicators (US$ billion)

	Foreign exchange Reserves 2007	Current a/c Surplus 2006	Gross domestic savings 2005
China	1333	160*	1096
Japan	893	170	1094**
S. Korea	250	6.09	257
Malaysia	91	19.9*	57

Source:
Foreign exchange reserves - IMF International Financial Statistics database
Current a/c surplus - World Economic Outlook database
Gross domestic savings - World Development Indicators
* Numbers for 2005
** Numbers for 2003

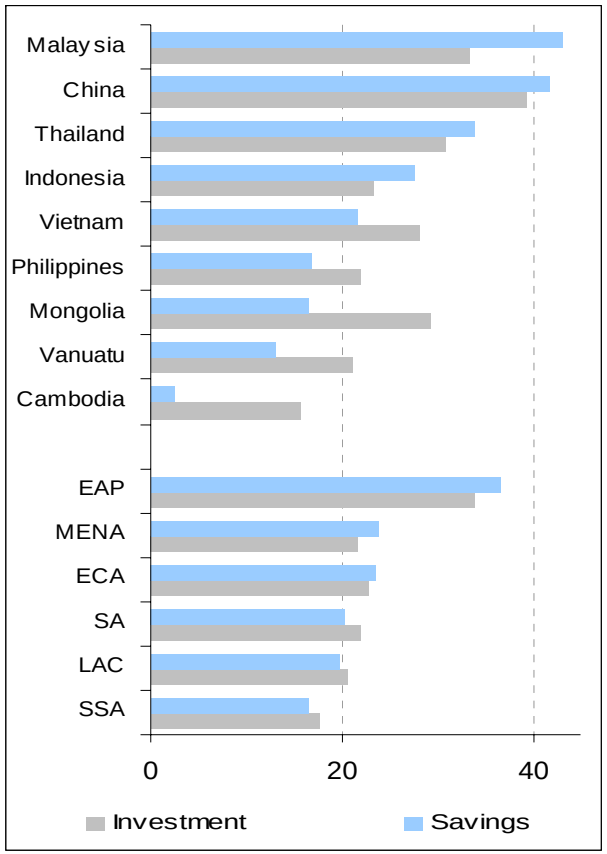
- In June 2007, China's foreign-exchange reserves had reached US$1.3trn
- By 2008, they exceeded US$2.0trn

Source: IMF International Financial Statistics database

… supported by a virtuous cycle of savings, investment and infrastructure expenditures

Savings and investment (% GDP)

1993-2002



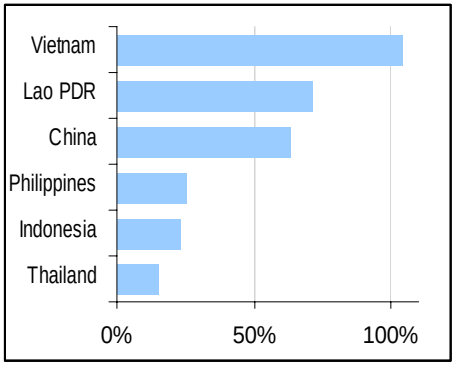
Source: World Development Indicators, 2004

Infrastructure investment (% GDP)

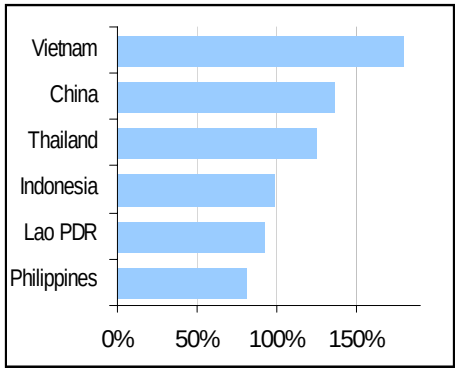
0-3%	4-7%	Over 7%
Cambodia	Lao PDR	China
Indonesia	Mongolia	Thailand
Philippines		Vietnam

Expansion of infrastructure stocks, 1990 – 2000

Total road network



Electricity generation capacity



Source: Connecting East Asia: A New Framework for Infrastructure, The World Bank

… but, infrastructure needs vary significantly across countries

Infrastructure financing needs over 2005-2015 in select EAP countries (US$ billion)

	Energy	Water	Transport	Total
Vietnam	32	7.2	14.3	**54**
Philippines	11	6.4	6.9*	**24**
Indonesia	25	8	10	**43**
Mongolia	1.7	1.4	0.89	**4**
Cambodia		0.3**	1.4*	**1.7**

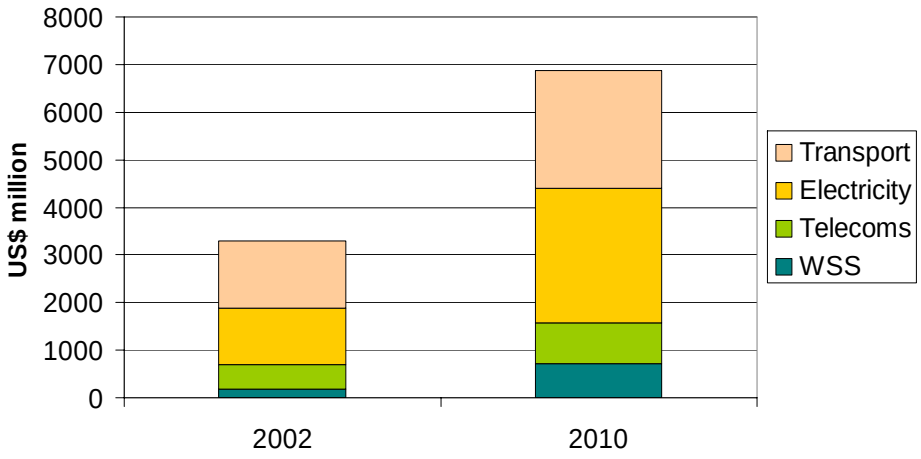
Source: World Bank Country Infrastructure Strategies; Cambodia: Enhancing Service Delivery through Improved Resource Allocation and Institutional Reform

* Includes only road transport

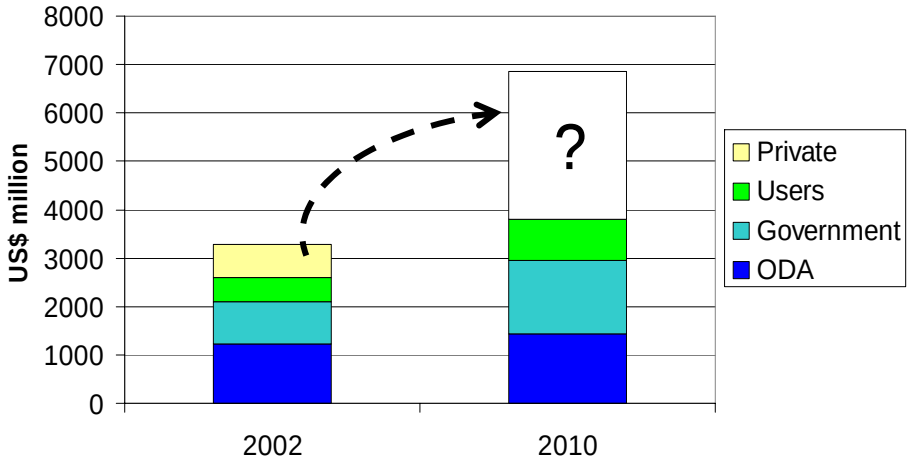
** 88 Includes only urban water sector

Infrastructure finance: Spotlight on Vietnam

Investment Needs



Infrastructure Financing Sources

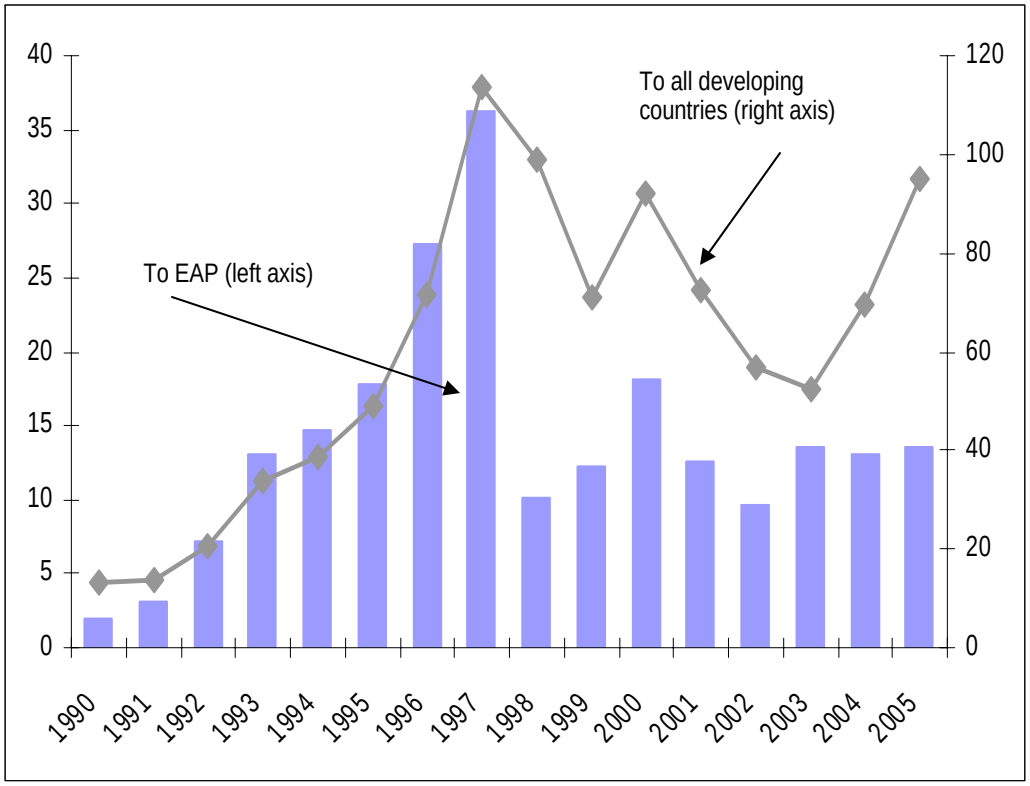


- Potential financing gap of around 5% of GDP by 2010
  - If ODA stays at roughly the same level, and user tariffs and government finance increase with GDP (7% growth)

- 2010 "needs" based on: Sept 2005 Min of Transport MTEF; Financial model used by EVN; Target of 35 telecoms lines per 100 people by 2010; Targets of 85% access to urban water and sanitation and 75% for rural water and sanitation
- "Government" financing includes budget, government bonds & State-Owned Commercial Banks
- 2010 financing requirement based on: Total of sectoral investment needs; ODA grows at 2% p.a. from 2002 level; Government and user payments grow at GDP growth rate (7%); Private sector provides the remainder

Critical to make multiple sources of infrastructure finance work together

Private sector investment in infrastructure ($ billion)



Source: World Bank PPI Database

Public Sector – incl. budget funding, government bonds, State Owned Commercial Banks; but need to create fiscal space and incentive framework for decentralized entities

International Donors – play a small financing role in most of the region, but provide catalytic role, leverage, innovation and policy advice

Private Sector – great potential, but cyclical; financing is available but regulatory frameworks still missing in most countries

General Business Implications

Diverse region; diverse needs, but general trends:

- High sustained growth
  - Sustained regional potential
  - Move from exports to domestic markets
  - Increased sophistication as revenues move up

- Increased Regional integration
  - Competitiveness and logistics
  - Hard competitive environment: efficiency

- Fast urbanization and decentralization
  - Messy business and policy environment
  - More demanding civil society (environment, corruption)
  - Local champions
  - Local knowledge and partnerships

- Financing not binding constraint (at regional level)
  - Value added and technology transfer
  - Institutional development and management practices
  - Diversified instruments
  - Leverage

- Increasing focus on balanced and sustainable growth and on climate change