



Infrastructure needs and the scope for a private role to emerge from the crisis: lessons from the last 20 years

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Overview

- **Some stylized facts**
- **The reforms of the 1990s in developing countries**
- **The supply side in infrastructure**
 - Is the market competitive?
- **The demand side**
 - How much infrastructure does growth demand?
- **The cost of equity in infrastructure**
 - How high does the rate of return need to be
- **The reforms payoffs in terms of:**
 - Investments
 - Efficiency
 - Fiscal
 - Governance
- **Who wins and who loses?**

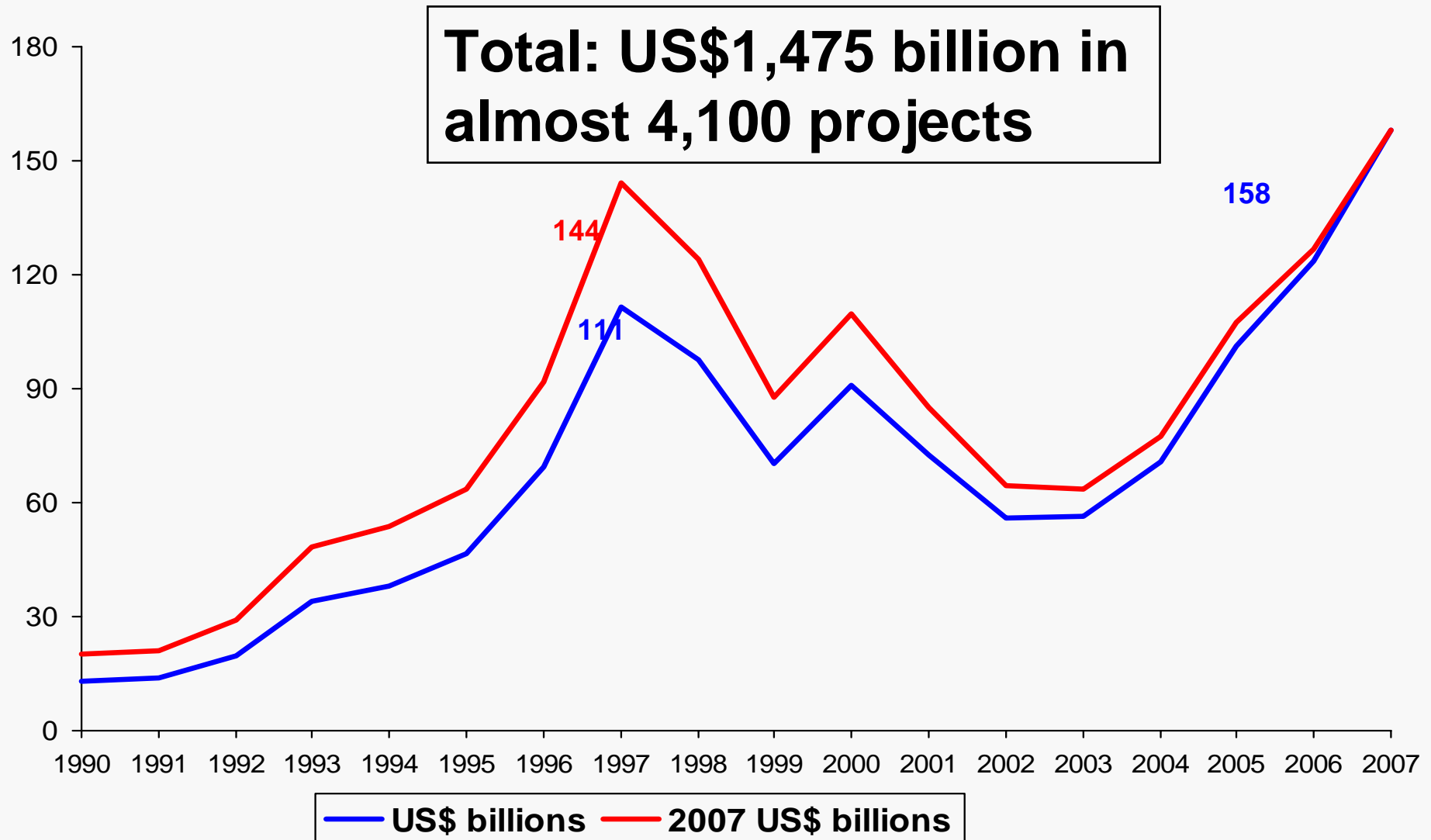


Background

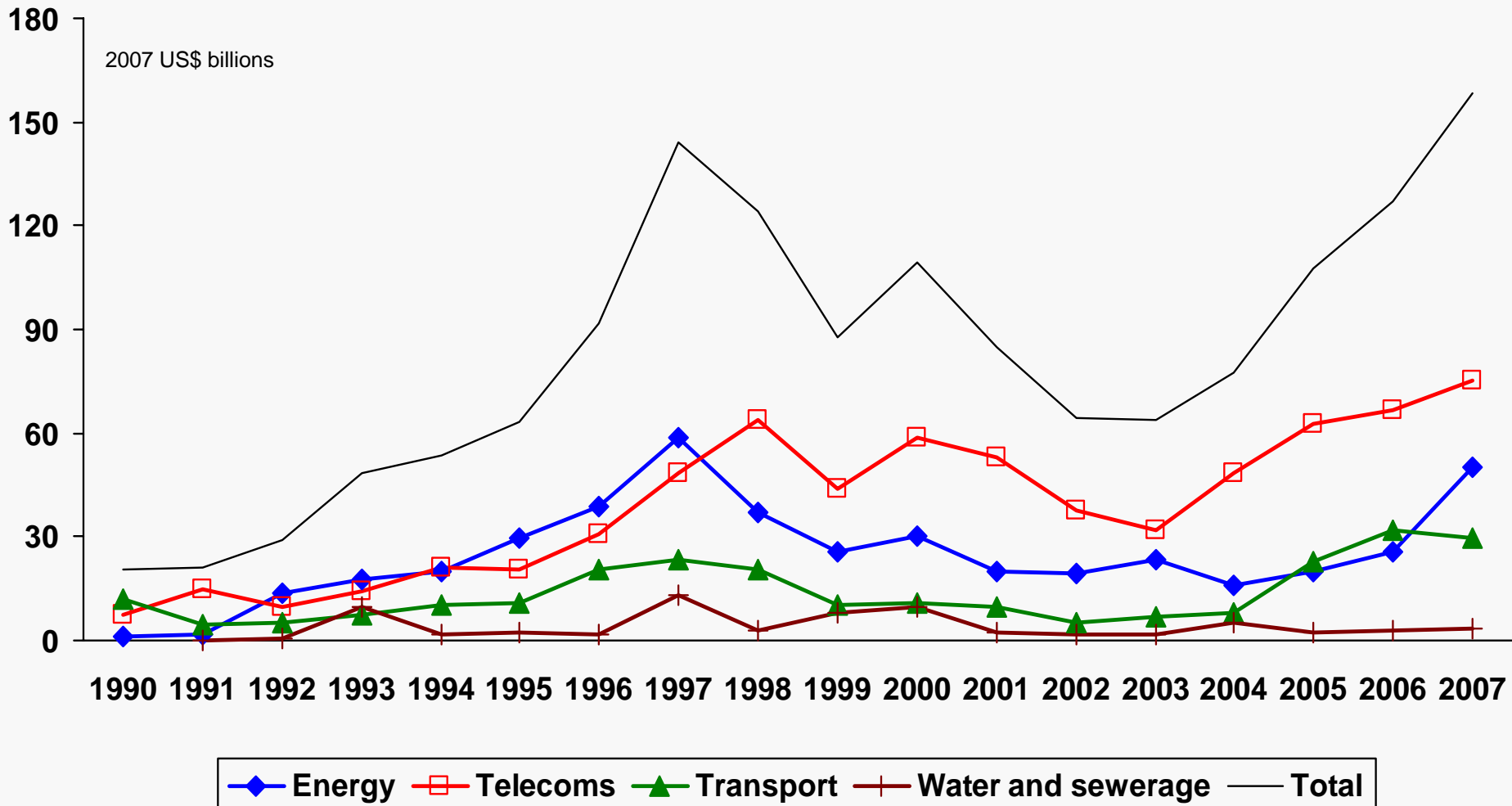
- Large private amounts invested in developing and developed countries infrastructure
- Large in absolute terms...
- ..but not so large in relation to the needs
- Let's look at the facts...



Investment commitments to infrastructure projects with private participation in developing countries in real and nominal terms, 1990–2007

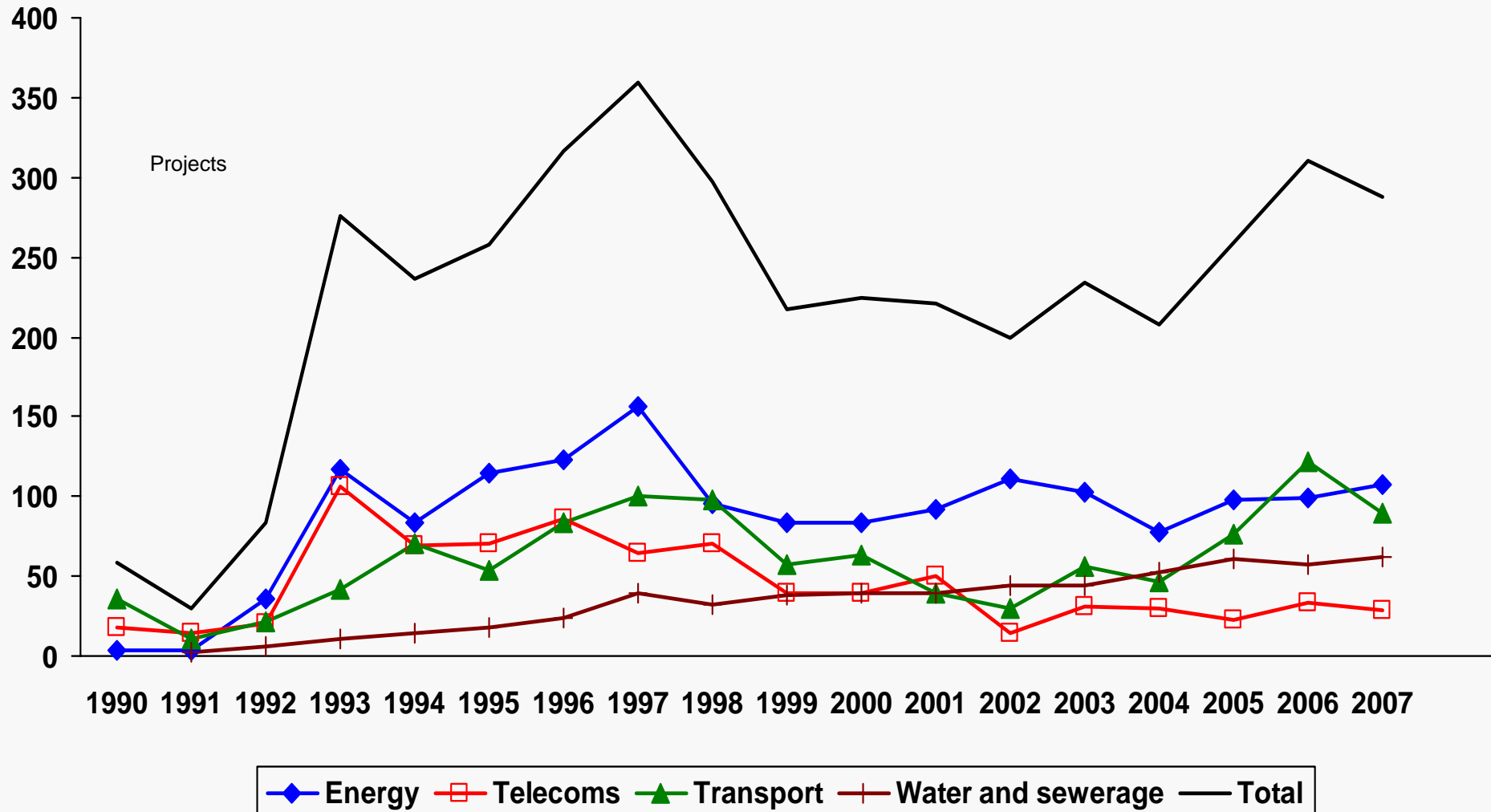


Telecoms and energy dominate the investments levels



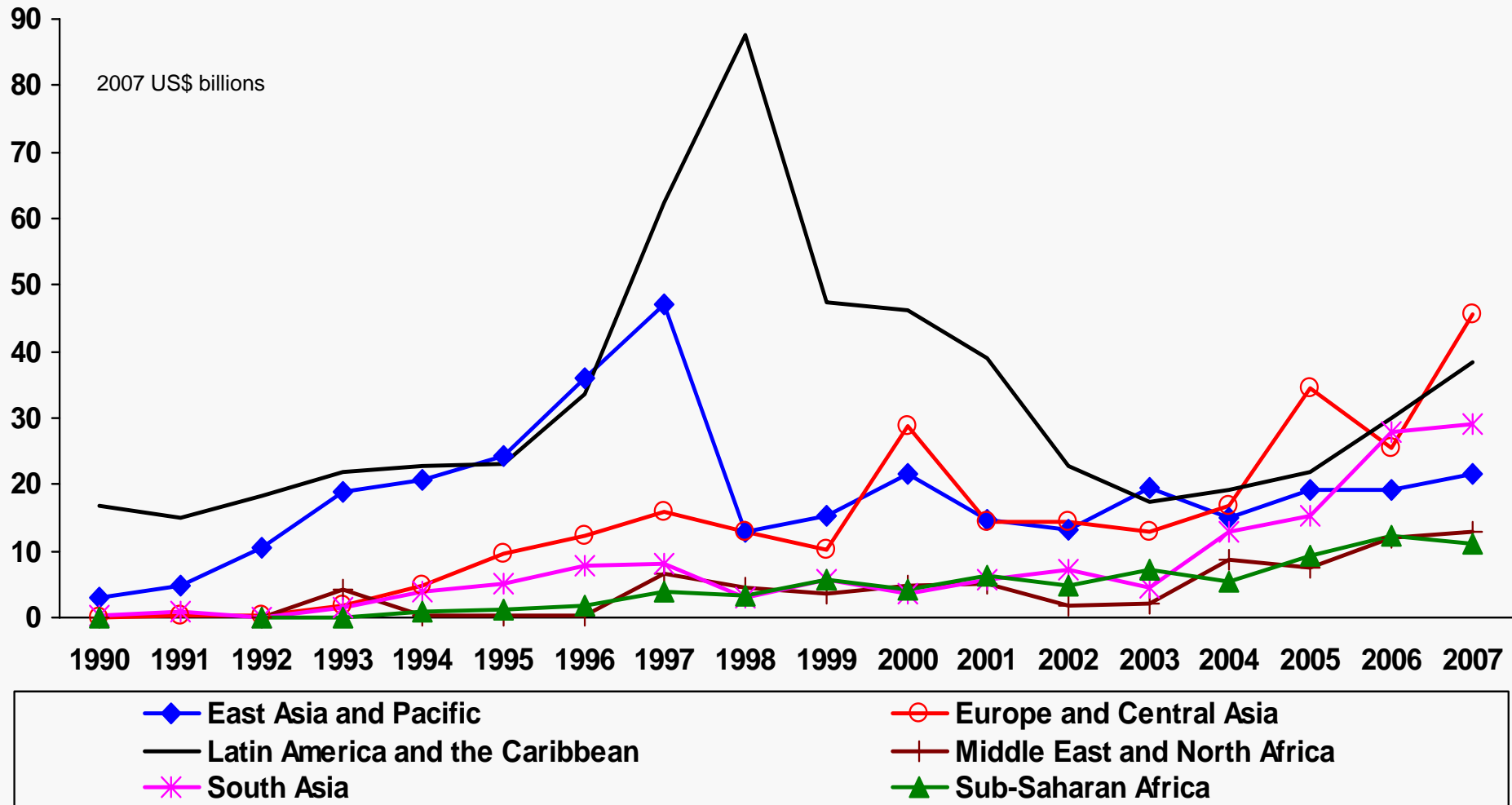


Energy and transport dominate the number of projects



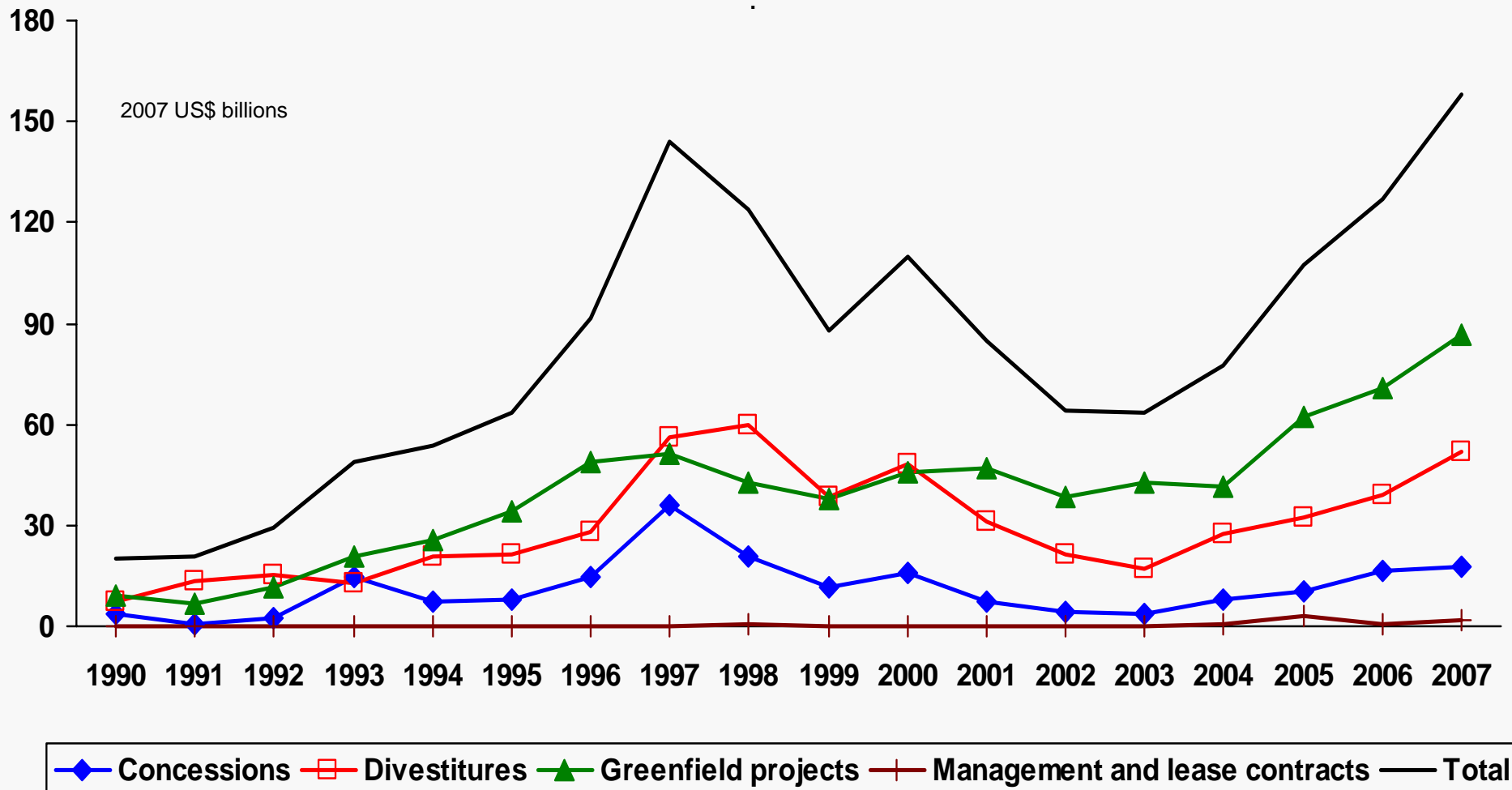


East Asia and Latin America are the favorite destinations





Greenfield projects and divestitures dominate the contract types





Top 10 developing countries benefiting

Top 10 by investment, 2001–07

| Country | Share of total investment in 2001–07 (%) |
|--------------------|--|
| Brazil | 12.3 |
| India | 11.5 |
| Russian Federation | 7.5 |
| China | 7.0 |
| Mexico | 6.1 |
| Turkey | 3.2 |
| Poland | 2.9 |
| Malaysia | 2.8 |
| Nigeria | 2.6 |
| South Africa | 2.6 |
| Total | 58.6 |

Top 10 by investment, 1990–2000

| Country | Share of total investment in 1990–2000 (%) |
|--------------|--|
| Brazil | 18.6 |
| Argentina | 11.3 |
| China | 8.9 |
| Mexico | 8.1 |
| Malaysia | 5.5 |
| Philippines | 4.7 |
| Indonesia | 4.1 |
| India | 3.3 |
| Thailand | 3.3 |
| Chile | 2.8 |
| Total | 70.7 |

Note: Includes investment in projects that reached financial closure in 1990–2007. Investment data are in 2007 U.S. dollars.

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Canceled or distressed infrastructure projects were not a big deal

Canceled or distressed infrastructure projects with private participation **by region**, 1990–2007

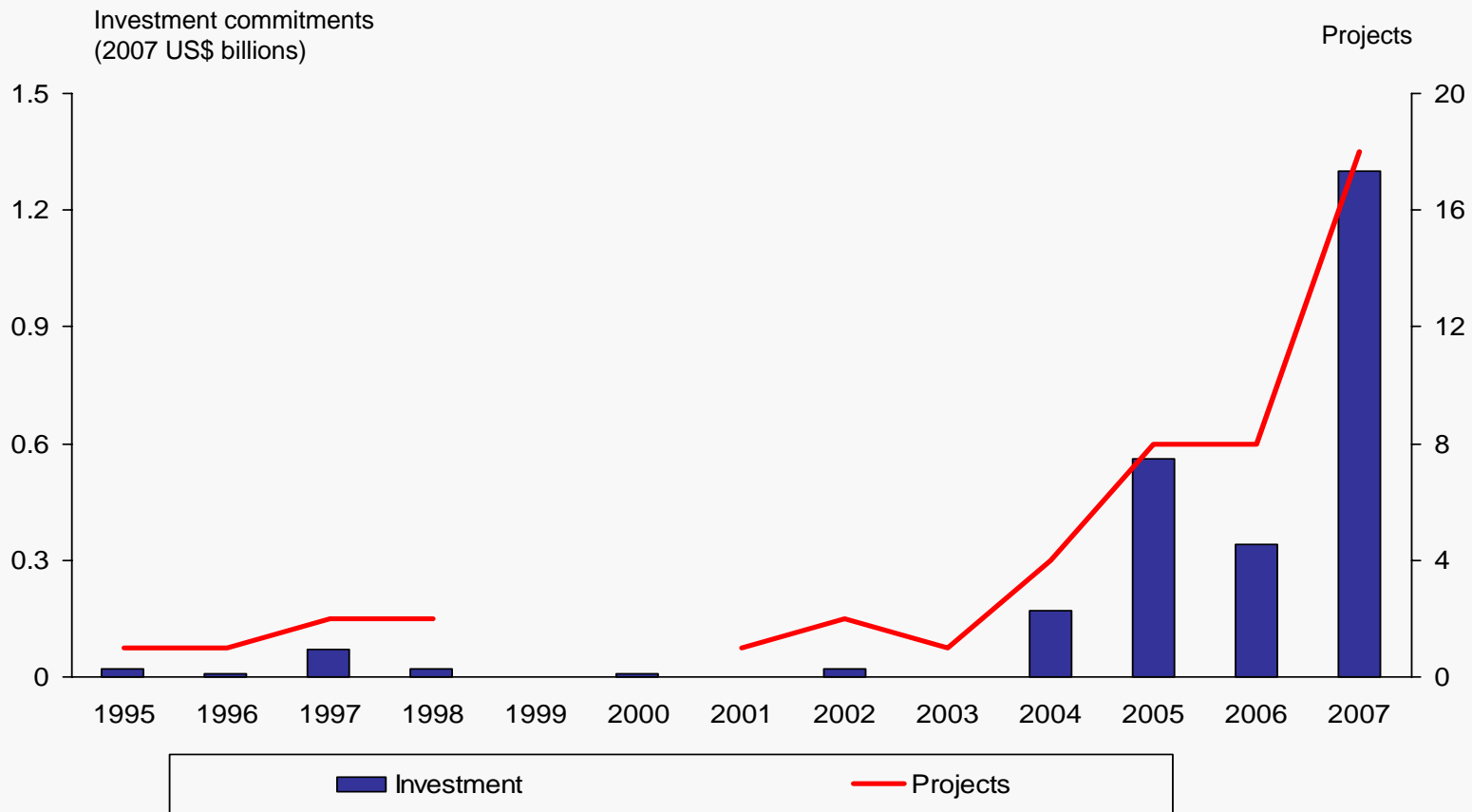
| Region | Investment | | Projects | |
|------------------------------|----------------------|------------|------------|------------|
| | Total (2007 US\$ bs) | % of total | Total | (%) |
| East Asia | 26.8 | 9.7 | 65 | 5.3 |
| Eastern Europe | 3.8 | 1.6 | 21 | 2.9 |
| Latin America | 48.9 | 10.3 | 117 | 9.4 |
| Middle East and North Africa | 1.0 | 1.5 | 6 | 4.7 |
| South Asia | 3.9 | 3.1 | 7 | 1.7 |
| SSA | 1.9 | 2.8 | 31 | 8.7 |
| Total | 86.3 | 6.9 | 247 | 6.1 |

Canceled or distressed infrastructure projects with private participation **by sector**, 1990–2007

| Sector | Investment | | Projects | |
|-----------|---------------------|-----|----------|-----|
| | Total (2007 US\$ b) | % | Tot. | (%) |
| Energy | 30.0 | 8.1 | 90 | 5.7 |
| Telecoms | 22.6 | 3.7 | 42 | 5.2 |
| Transport | 17.4 | 8.3 | 62 | 5.7 |
| Sanitat. | 16.4 | 29 | 53 | 9.1 |

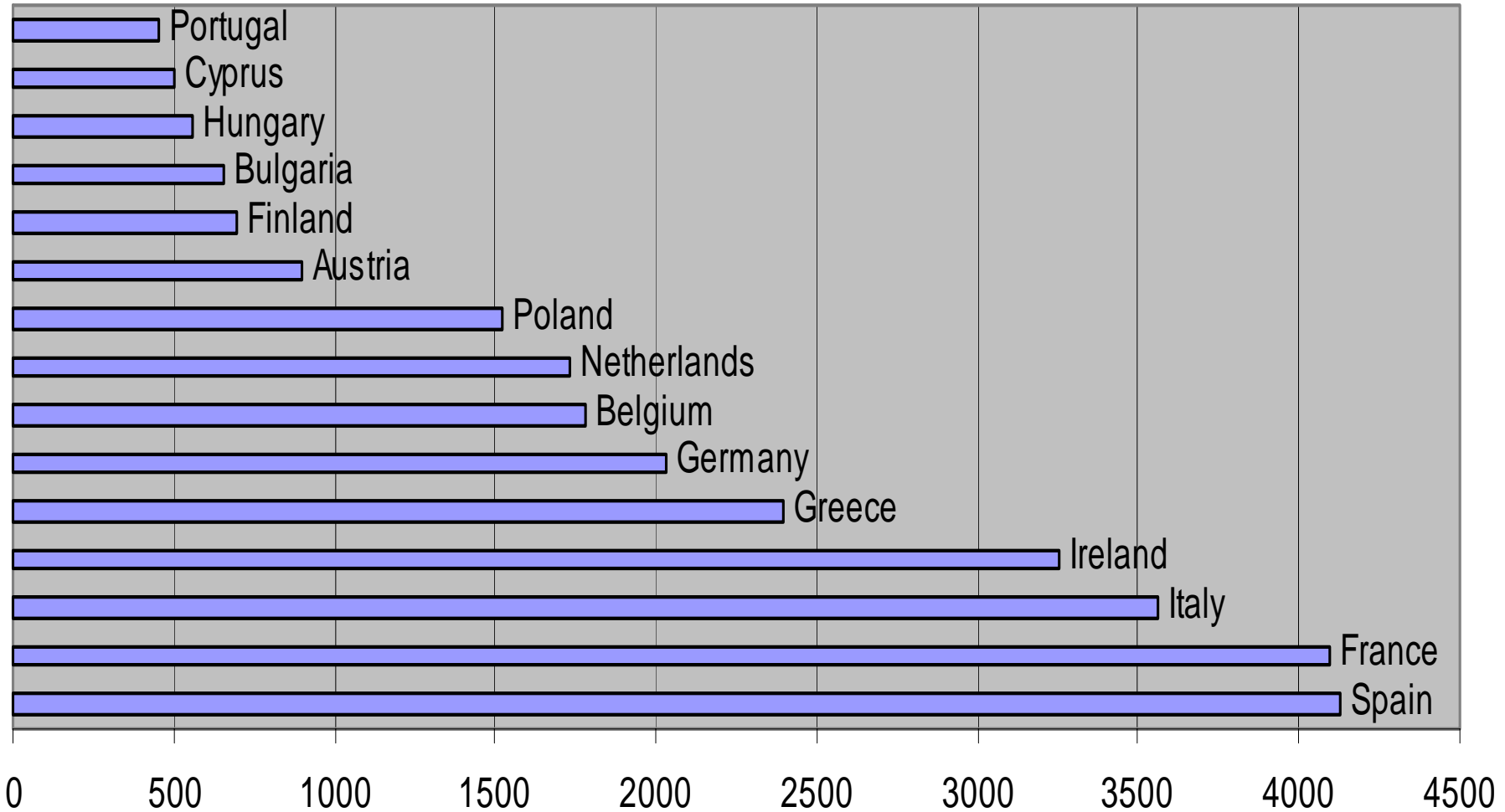


Where is the market going? Look at wind power projects with private participation in developing countries, 1995–2007





What happened in Europe (1) (million Euros - 2001-2008)





But the trend is downward in continental Europe (i.e. excluding UK)

| | |
|-----------|------|
| 2001-2004 | 7989 |
| 2005 | 8918 |
| 2006 | 7367 |
| 2007 | 7353 |
| 2008 | 4968 |



What's the impact of the 2008 crisis

- **August 2008-February 2009**
 - **Strongly lower rates of financial closure**
 - **About 22% of surveyed projects delayed**
 - **2% canceled**
 - **3% at risk of being canceled**
 - **... 47% at risk of being delayed if financing is not put in place soon**



Less private interest...yet Infrastructure is central to most recovery programs!

- **Huge hope for recovery and job and business creation due to infrastructure projects**
 - **2500-3000 billion US\$ worldwide**
- **Strong role expected AGAIN for PPI**
- **Did we fully internalize the lessons of the last 20 years?**



The reforms of the 1990s

- **Three main “standard” reforms:**
 - **Relying more on competition**
 - ◆ **In the market when possible**
 - ◆ **For the market otherwise**
 - *In general, if there is private sector, there is at least one form of competition*
 - **Opening up to private sector**
 - **End to self-regulation, i.e. create “independent” regulatory agencies**



% of countries with Private Participation in Infrastructure (2004)

| | Elec.Gn. | Elec.Dis. | W&S | Rail | Telecms |
|---------------------|-----------------|------------------|----------------|-------------|----------------|
| Tot. Dvlping | 44% | 36% | 35% | 37% | 48% |
| Tot. Dvloped | 70% | 43% | 80% | 65% | 83% |
| Total | 48% | 36% | 42% | 43% | 55% |



% of countries with Independent Regulatory Agency (2004)

| | Elect. | W&S. | Rails | Telecms |
|------------------------|---------------|-----------------|--------------|----------------|
| Total Dvlping | 50% | 26% | 7% | 61% |
| Total Developed | 92% | 20% | 21% | 55% |
| Total | 57% | 25% | 9% | 60% |

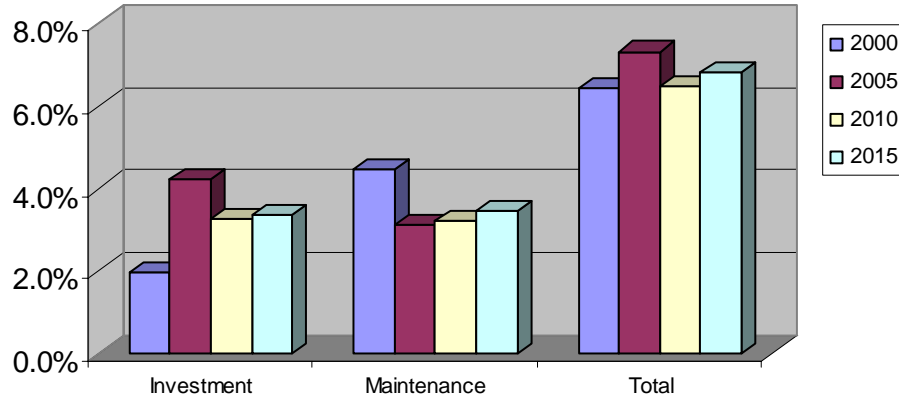


Concentrated Supply...but shrinking concentration thanks to new actors

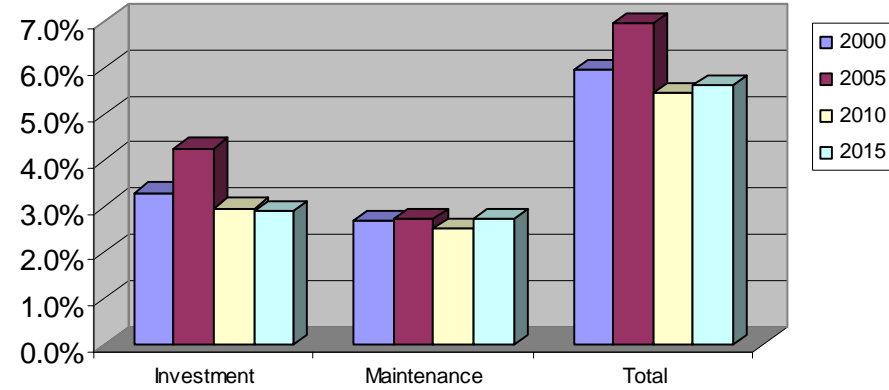
| | Electricity | | Telecoms | | W & S | |
|----------------|-------------|--------------|-----------|-----------|-----------|------------|
| | Generation | Distribution | Fixed | Mobile | Water | Sanitation |
| Global | Prob. Not | Prob. Yes | P. Yes | P.Not | P.Yes | P. Not |
| Africa | Prob. Not | Prob. Not | P. Not | P. Yes | YES | Prob. Not |
| Asia & Oceania | Prob. Not | Prob. Yes | Prob. Yes | Prob. Not | Prob. Not | Prob. Not |
| Latin America | YES | Prob. Yes | YES | Prob. Yes | Prob. Not | Prob. Not |
| North Africa | NO | n.a. | Prob. Not | Prob. Not | YES | Prob. Yes |
| Eastern Europe | NO | YES | YES | Prob. Yes | Prob. Not | Prob. Yes |
| West. Europe | YES | YES | YES | Prob. Yes | Prob. Not | Prob. Yes |

How much infrast. expenditure does 2005-2015 growth require? (% of GDP)

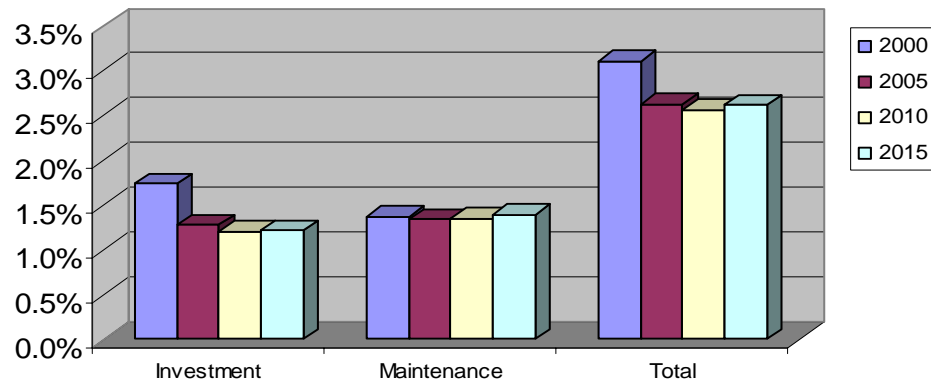
Low Income Countries



Lower-Middle Income Countries



Upper-Middle Income Countries





How much is needed in OECD?

- **Rough estimates from the OECD Infrastructure Project to 2030 total**
- **Around of 3.5% of GDP in investment for telecommunications, road, rail, energy (generation, transmission and distribution including oil, gas and coal) and water**
 - **Ignores ports, airports and storage facilities**

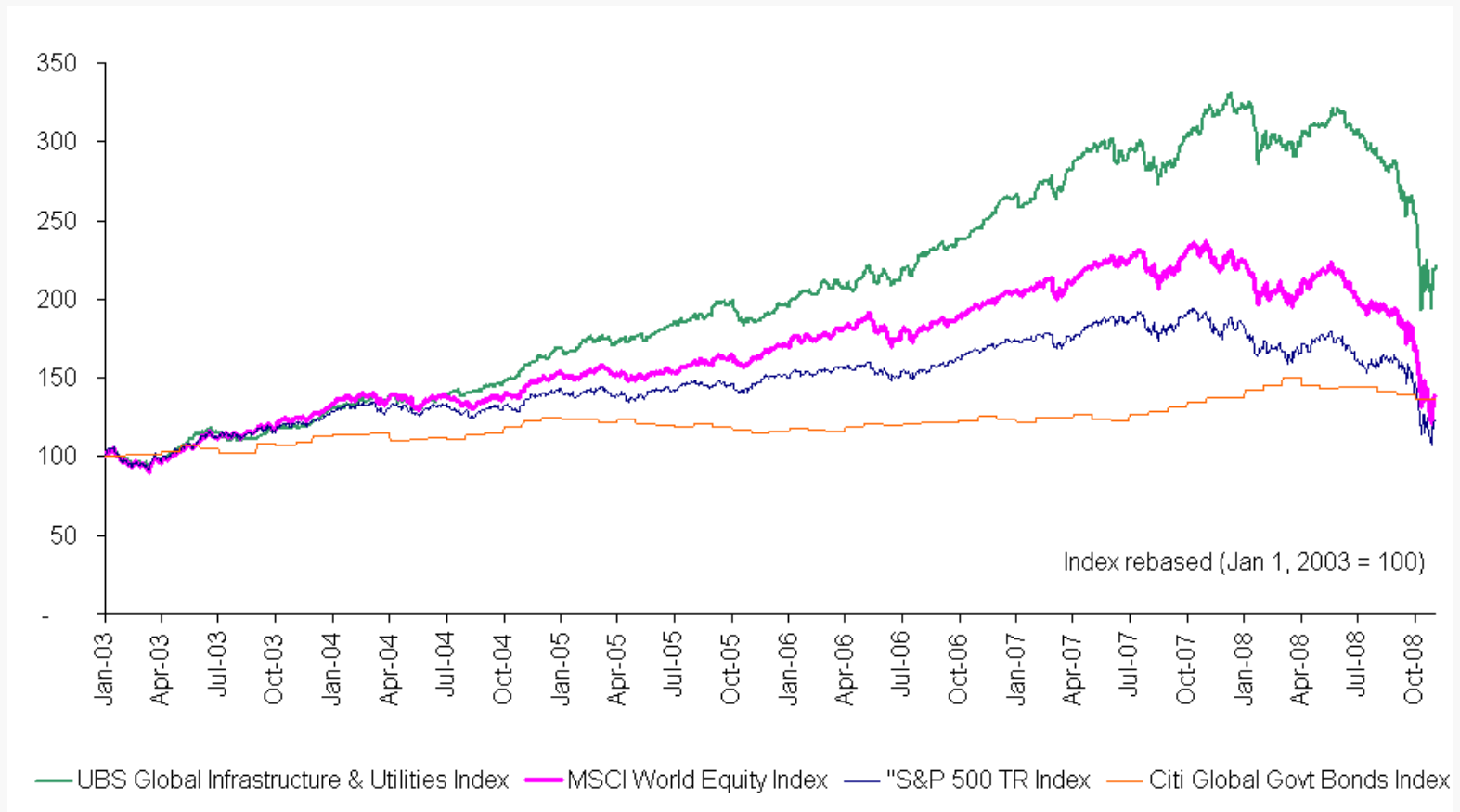


**According to the Lazard Infrastructure Investment Fund:
41 trillions US\$ infrastructure world investment will be needed
during the next 25 years to modernize and meet expanding
demand**

| | Water | Energy | Roads and Rail | Airport and ports |
|----------------------|------------------|---------------|-----------------------|--------------------------|
| Africa | 1% | 2% | 4% | 9% |
| USA/Can. | 1% | 6% | 4% | 1% |
| Latin America | 16% | 17% | 12% | 27% |
| Europe | 22% | 16% | 13% | 4% |
| Asia/Oce. | 20% | 12% | 40% | 27% |
| Middle East | 40% | 4% | 27% | 32% |
| Total | 22.6TUS\$ | 9TUS\$ | 7.8TUS\$ | 1.6TUS\$ |



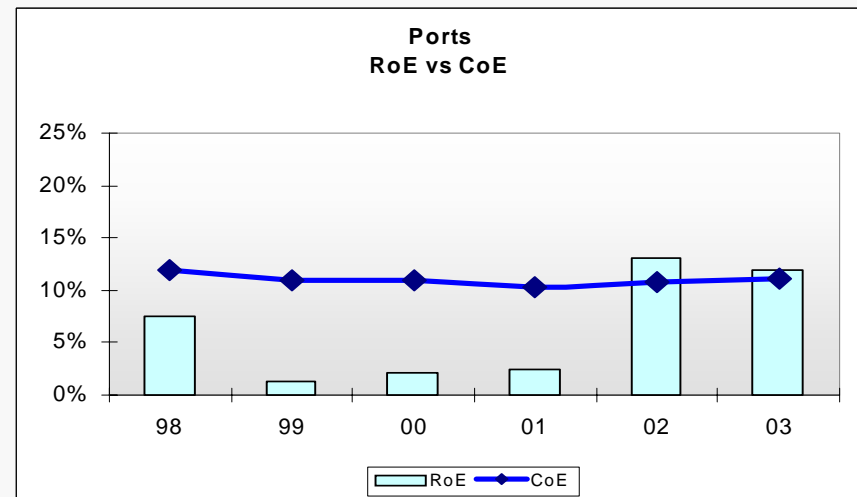
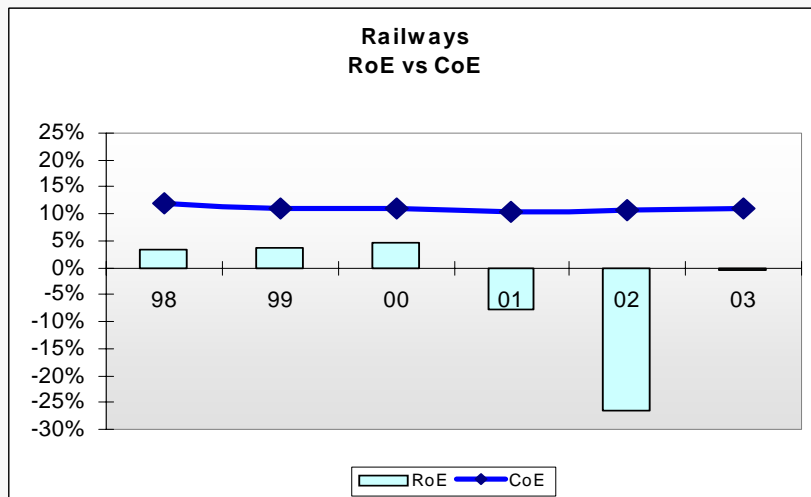
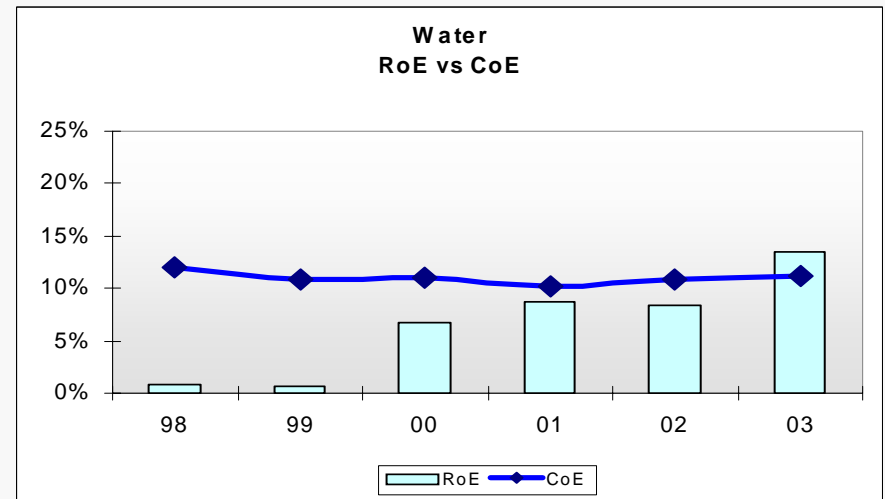
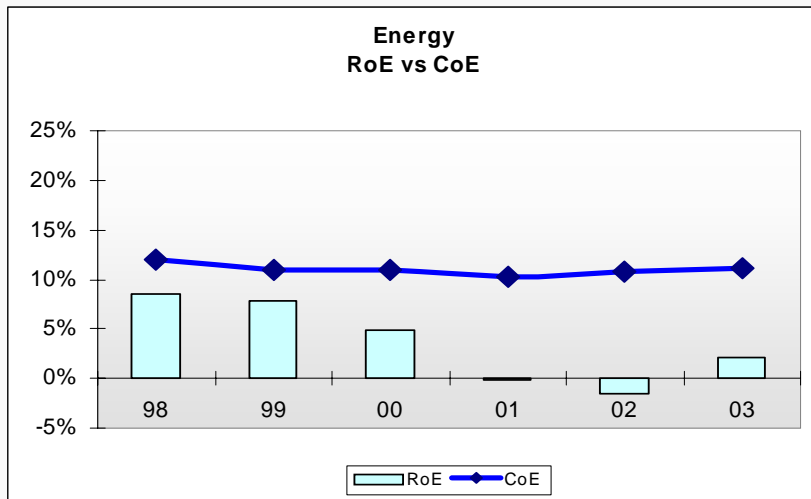
Infrastructure Funds – Performance tend to do better than average



Source: The World Bank & PPIAF in presentation from Michael Barrow, Asian Development Bank, PPPI Days, Washington D.C., December 15-18, 2008



But returns on equity are not always enough to cover the cost of equity in poorer countries (...if no subsidies...)





So what were the payoffs of these reforms?

- **Payoffs in terms of what?**
- **Look at the political promises:**
 - Higher investment levels
 - Higher efficiency levels
 - Higher fiscal benefits
 - Higher social benefits
 - Higher accountability (Governance benefits)



Payoffs in terms of investment levels?

- **In general: OK in absolute terms, not so great in relative terms**
- **In LDCs: No clear effect**
 - Fast increase till 1997, then drop, then recovery around 2003 and then drop again in 2008
 - Not as much as expected
 - ◆ decline in total capital expenditures from 8-10% in 1970s to 1-3% since mid 1990s
 - ◆ And it is not only a result of efficiency gains
 - ◆ In Africa for instance, mostly catch up with pop. Growth
 - ◆ But China and India are expected to change the picture...
 - Not as private as expected
 - ◆ 22% private and mostly in middle income countries
 - Significant cream-skimming problems:
 - ◆ Typically urban better off than rural



What happened to the efficiency payoffs?

■ Gains in general

- Evidence from partial performance indicators
- Confirmed by a few papers looking at more economic concepts of efficiency (TFP, TE, TEC)
- Noteworthy:
 - ◆ Evidence that regulatory regime drives efficiency often more than ownership



What do we know about the Long Term Fiscal Payoffs?

| | Utilities | Transport |
|--------------------------------|------------------|------------------|
| Recurrent Expenditures | - | + |
| Investment Expenditures | + | - |



A first look at the social benefits

- **The end of cross-subsidies**
- **The back and forth on social subsidies**
- **The targetting challenges**
- **The access vs the usage problem**



What about accountability in this sector?

- **This may be one of the most corrupt sectors around the world (due to high construction component)**
- **Regulation and regulatory accounting can fix many of the issues**
- **...and yet, regulation quality has not improved significantly around the world in the last 20 years...**
 - **More independence but not more autonomy and hence no more accountability!**



So who won and who lost with the reforms??

- **Depends on what you look at:**
 - **Investment levels in Regions?**
 - **Investment levels in Sectors**
 - **Actors?**



The winners and losers in terms of Regions

- **Winners:**

- Latin America and East Asia..and to some extent Eastern Europe

- **Losers:**

- Africa, Middle East and South Asia



The winners and losers in terms of Sectors

- Winners:

- Telecoms and Energy

- Losers:

- Water and Sanitation
- Transport infrastructure
 - ◆ (Transport services have been doing much better)



The winners and losers in terms of Actors

- **The actors in the payoff matrix**
 - **Users (access: (+ but < hoped & inequities), affordability(-), quality (+))**
 - **Taxpayers (+ in SR, -/+ in LR)**
 - **Workers (- in SR, + in LR)**
 - **Operators (+ in SR, ? for LR)**
 - **Local owners (+ in SR and LR)**
 - **Foreign owners (+in SR, +/-in LR)**
 - **Bankers (+ in SR and LR)**
 - **Politicians (+ in SR and LR)**



So where do we go from here? (1)

- **PPPs are here to stay!**
 - But we need to do them better
 - Plenty of toxic products in project finance...
- **The point is that the state will not be able and should not want to deliver on infrastructure on its own!**
- **But need to be realistic on:**
 - The financial cost
 - The cost to users
 - The cost to taxpayers
 - The implementation speed
 - The risks of corruption



So where do we go from here? (2)

- Trade-offs between efficiency, equity and fiscal costs are very much present in this sector
- The associated potential rents are huge (up to 9% of GDP!)
- Ignoring the trade-offs mostly hurts the users in the short run
- ...and in the longer run...both the users and the taxpayers...



So where do we go from here? (3)

- How can we deal with this?
- ... **Push governments to become serious about ECONOMIC regulation!**
 - We need sound, technically competent and accountable regulators... which are not a common feat neither in LDCs...nor in OECD countries...
 - Nothing to do with skills
 - Everything to do with a lack of political will to deliver on the accountability agenda...
 - And yet political accountability for effectiveness in this sector is essential for the delivery of the promises of the sector!