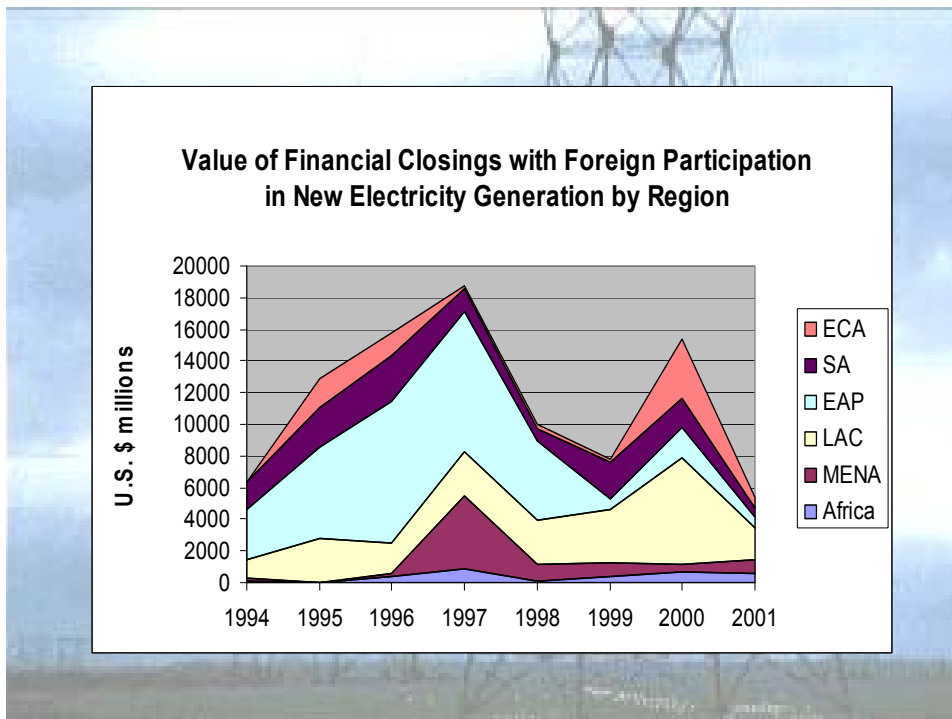


## Foreign Direct Investment in Developing Country Electricity Generation: Macroeconomic *Force Majeure* or a Dying Paradigm?

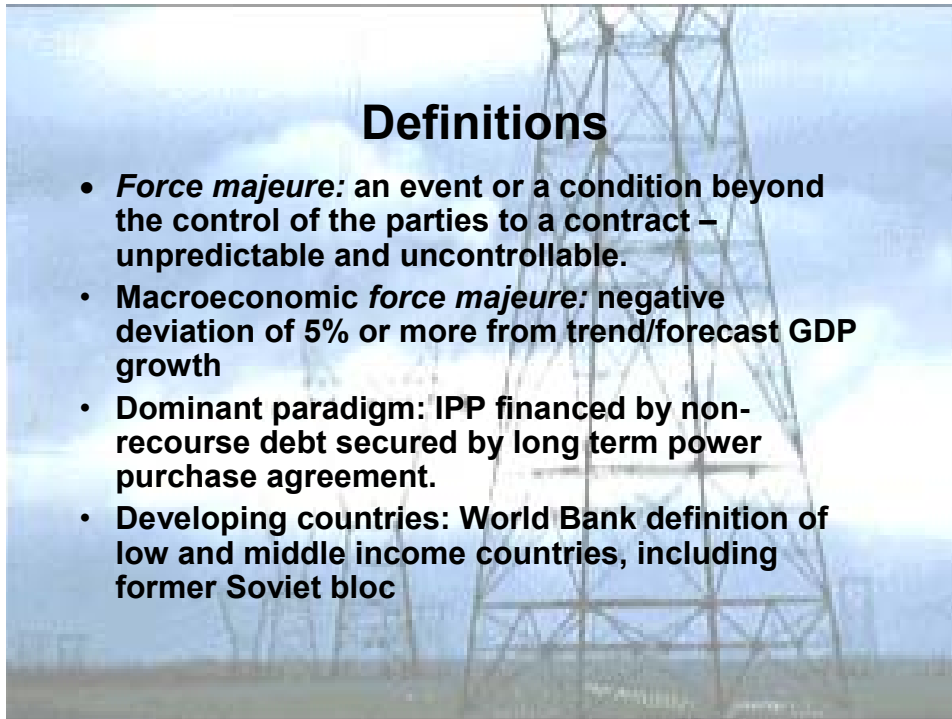
Amanda Beery and Robert Thomas Crow  
February 19, 2003

- **Five-mile high view of foreign participation in generation capacity expansion**
- **Title poses a question we are researching. We do not yet have an answer.**
- **Use of Private Participation in Infrastructure database from the World Bank, edited to separate new capacity from privatizations and foreign-participation projects from purely domestic projects.**



- **Here is what prompted the question: at the onset of the East Asian financial crisis, value of foreign-participant financial closings (VFFCs) in new generation fell sharply, except for 2000.**
- **Financial closing: when all agreements are in place and developers can begin to draw on funds for procurement and construction. Note that it is not a flow of investment throughout the construction of the project, but a one-time event.**

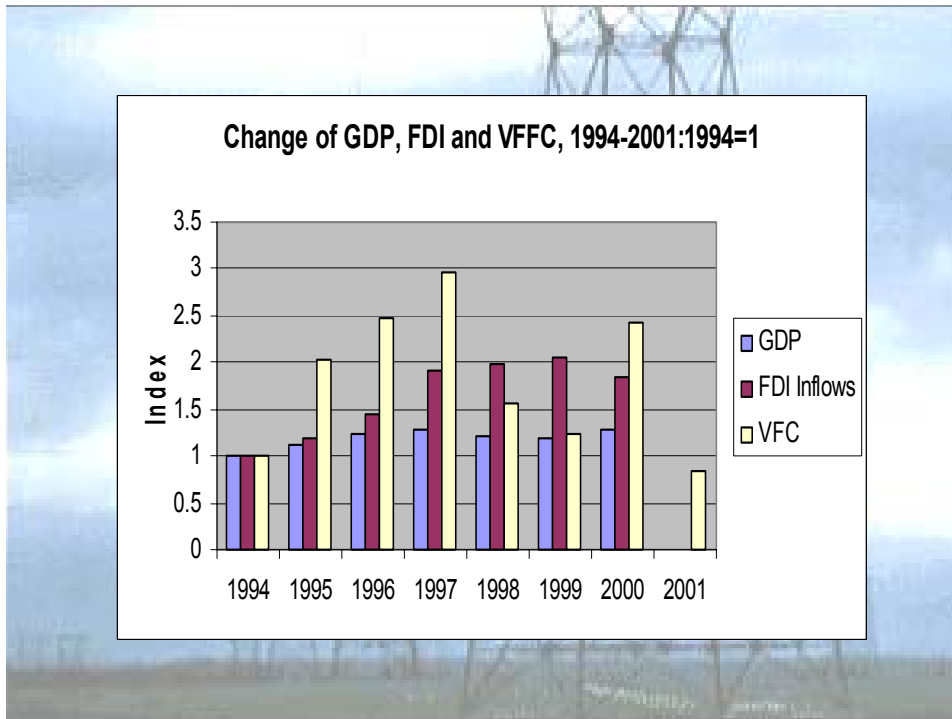
- As of the onset of the crisis in 1997, East Asia accounted for over half of all value of for financial closings for IPPs with foreign participation. Has not recovered. Why?



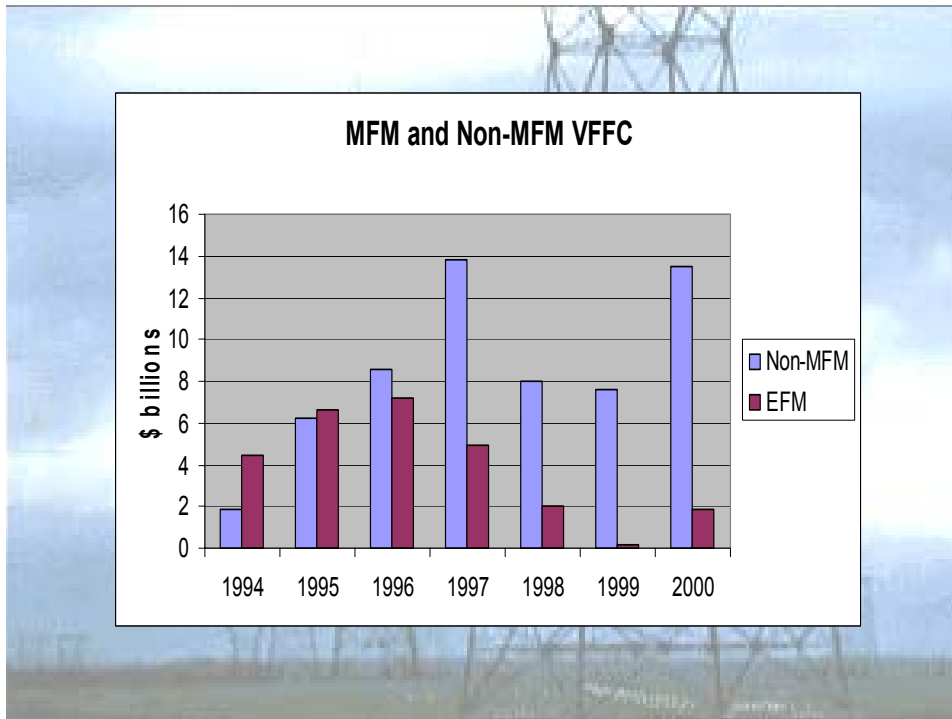
## Definitions

- *Force majeure*: an event or a condition beyond the control of the parties to a contract – unpredictable and uncontrollable.
- *Macroeconomic force majeure*: negative deviation of 5% or more from trend/forecast GDP growth
- *Dominant paradigm*: IPP financed by non-recourse debt secured by long term power purchase agreement.
- *Developing countries*: World Bank definition of low and middle income countries, including former Soviet bloc

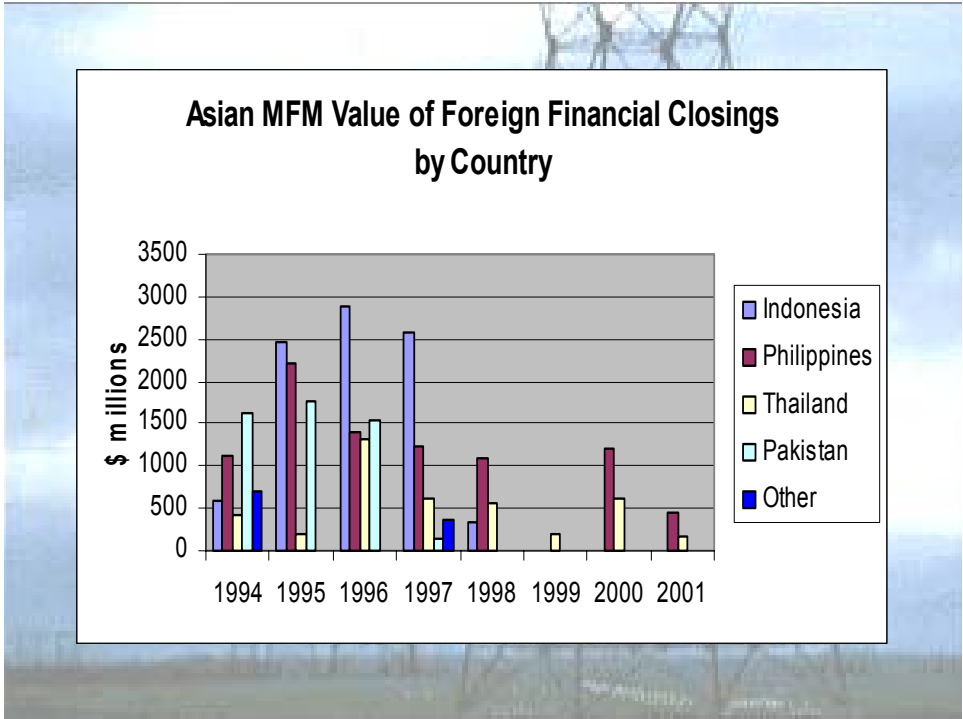
- MFM is a crisis like 1997-98 in East Asia.
- Hypothesis: since MFM is a risk that cannot be hedged/insured, its threat inhibits FDI in IPPs. Hence no recovery.
- Alternative hypothesis: inherent limitations of PPA-based projects inhibit foreign direct investment. Failed projects in countries that have not experienced crises, esp. China and India.



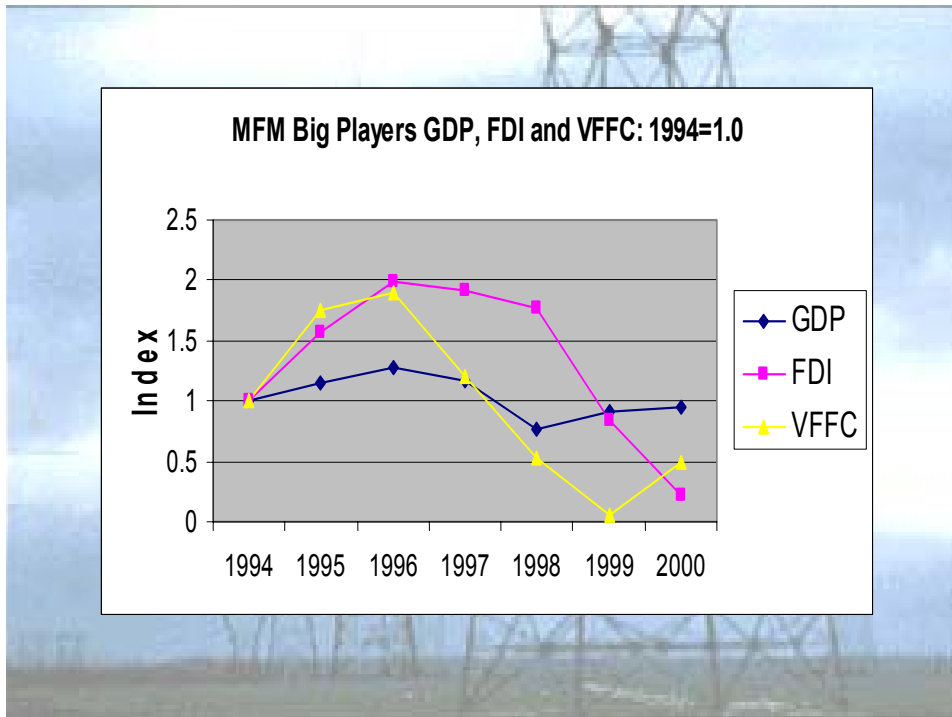
- **FDI more volatile than GDP, VFFC more volatile than FDI – in part because VFFC represents multi-year FDI.**
- **Developing countries GDP flat since 1996, FDI increased until 2000. VFFC more volatile and declining since 1997.**



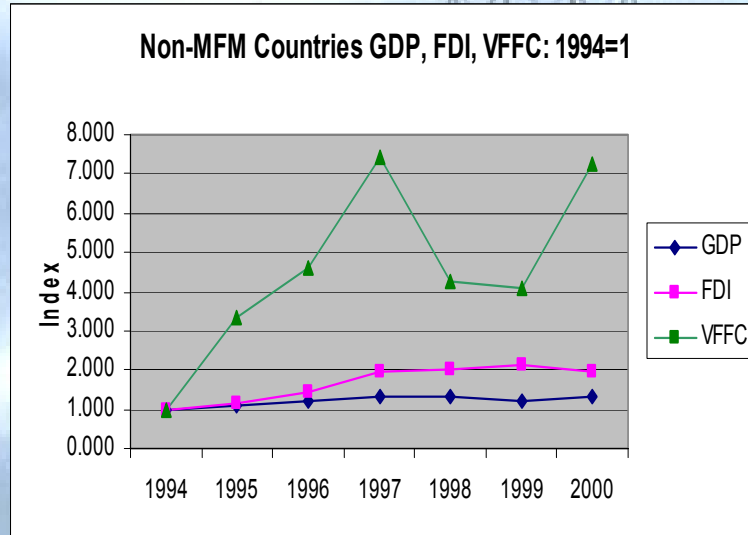
- **China excluded because of particular factors.**
- **Separating MFM from Non-MFM countries shows that up to 2000, sharp decline was primarily in MFM countries. Is MFM an inhibiting risk or is there another explanation?**
- **2000 an aberration?**
- **2001 not included because GDP and FDI data not available. Argentina and maybe other MFM countries in 2001.**



- Breaking down Asian MFM countries, Indonesia, Pakistan, Philippines and Thailand were big players. S. Korea and Malaysia had one-off projects.**



- **GDP almost back at 1994 levels, but FDI and VFFC low.**
- **Normally, expanding GDP would be necessary to support investment, but there are still power shortages.**
- **Is slump due to MFM risk, a broken paradigm, or something else?**



- **Not much trend in VFFC since 1996. Was 1997 an aberration, as well as 2000?**
- **Were 1998 and 1999 due to contagion effects of East Asia crisis?**

## Questions

- Are MFM countries suffering from prolonged effects of 1997-98 crisis, or is there also paradigm failure?
- Even allowing for problems in Latin America in 2001, VFFC was small. Which was the aberration, 2000 or 2001?
- If the PPA-based IPP paradigm is a failure, what will replace it?