

PPP Workshop: Lessons from Asian Experience

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The Post-Chengdu Evolution of PPPs in the Water Supply and Sanitation Sector (PRC)

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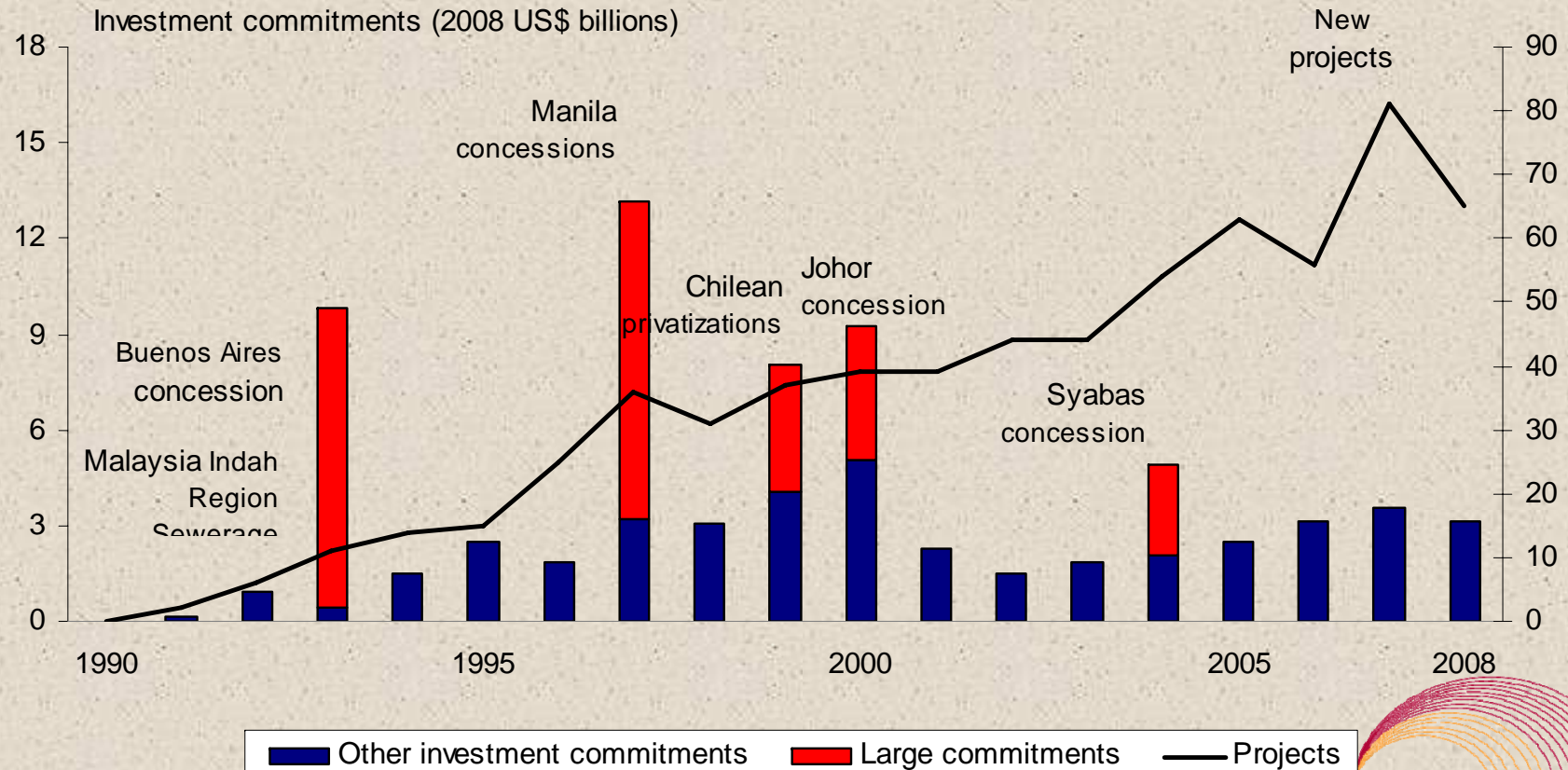
PPP Evolution in the PRC WSS Sector

Outline

1. International Evolution of PPPs
2. PPP Developments in the PRC
 - General: economic, financial and legal
 - Water supply and sanitation (WSS) in the PRC
 - PPPs in the PRC
 - PPP case studies
3. Conclusion and Lessons

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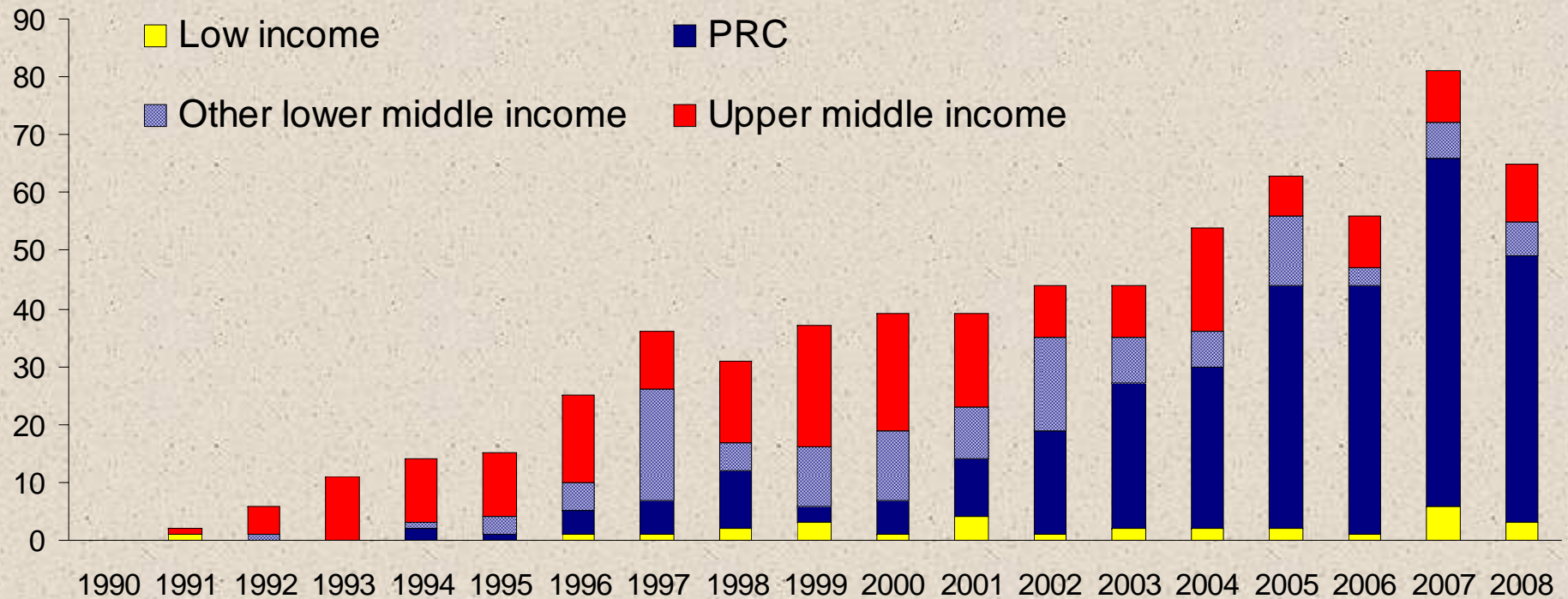
Private Participation in Water in Developing Countries (1990-2008)



Source: World Bank and PPIAF, PPI Project Database.

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PPP Water Projects in Developing Countries by Country Income Group (1990-2008)



Source: Public-Private Infrastructure Advisory Facility (PPIAF), Private Participation in Infrastructure (PPI) Project Database.

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2.1. Economic, Financial and Legal Developments

- Economic growth averaged 9% annually since 1978
- Urban population tripled since 1980: 607 million (2008)
- On track to meet 2010 target of urban wastewater coverage (70%) and solid waste management (60%)
- Urban area tap water coverage: 64% (2000), 91% (2005), 95% (2010), but shortages in many cities
- Urban wastewater treatment ratio rose from 34% (2000) to 52% in 2005, but some cities without facilities or facilities operating below capacity

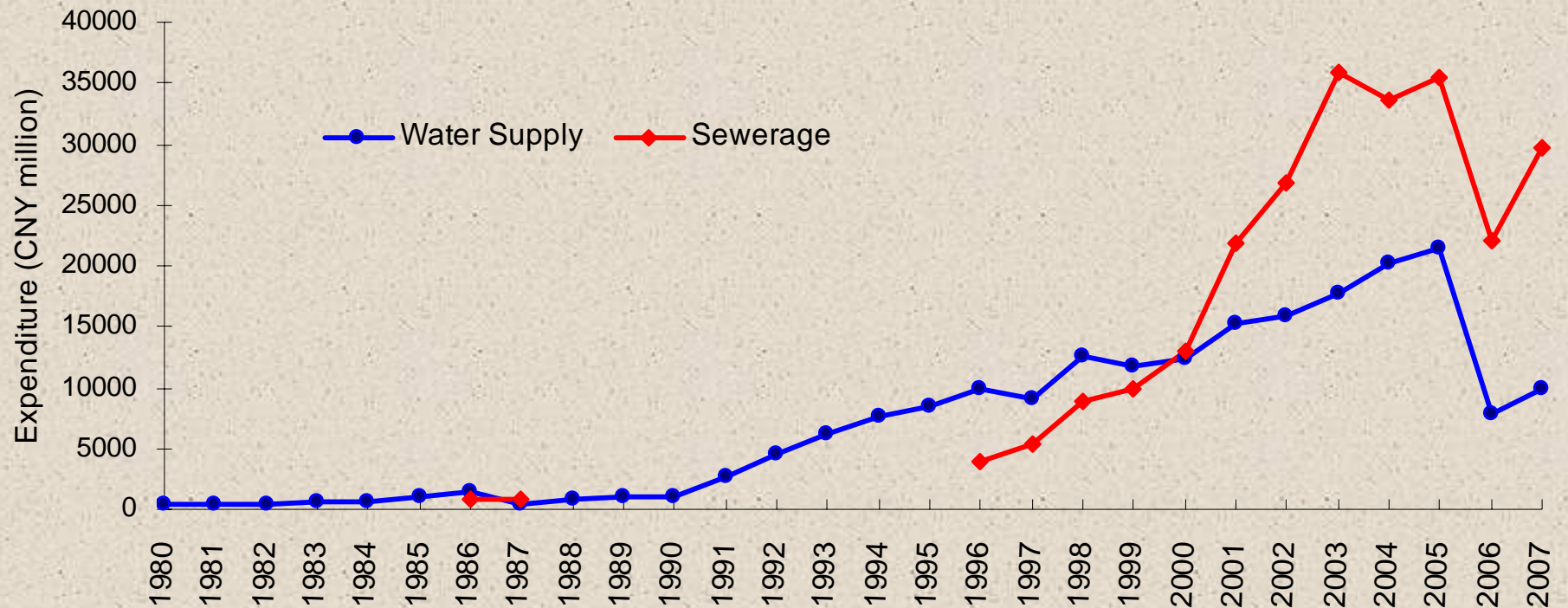
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2.1. Economic, Financial and Legal Developments

- Solid waste volumes increasing dramatically
- Water scarcity and degradation
- Huge investment requirements: CNY450 billion (US\$66 billion) 2002–2010
- Government response for the WSS sector:
 - 1990s: Relaxed restrictions over foreign company operations
 - 2002: Marketization reforms

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Expenditure of Urban Construction Funds on Water Supply and Sewerage (1980–2007)



Source: Ministry of Construction. 2008. *China Urban Construction Statistical Yearbook*.

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Indicative Ranges of Urban WSS Financing Sources (2008)

Financing Source	Water Supply (%)	Wastewater (%)
Municipal Government	50-60	5-10
State Bond Program	10	35
China Development Bank	5	3
Private Sector	20-30	20-30
International Financial Institutions (e.g., ADB) and intergovernmental bilateral loans	6	24

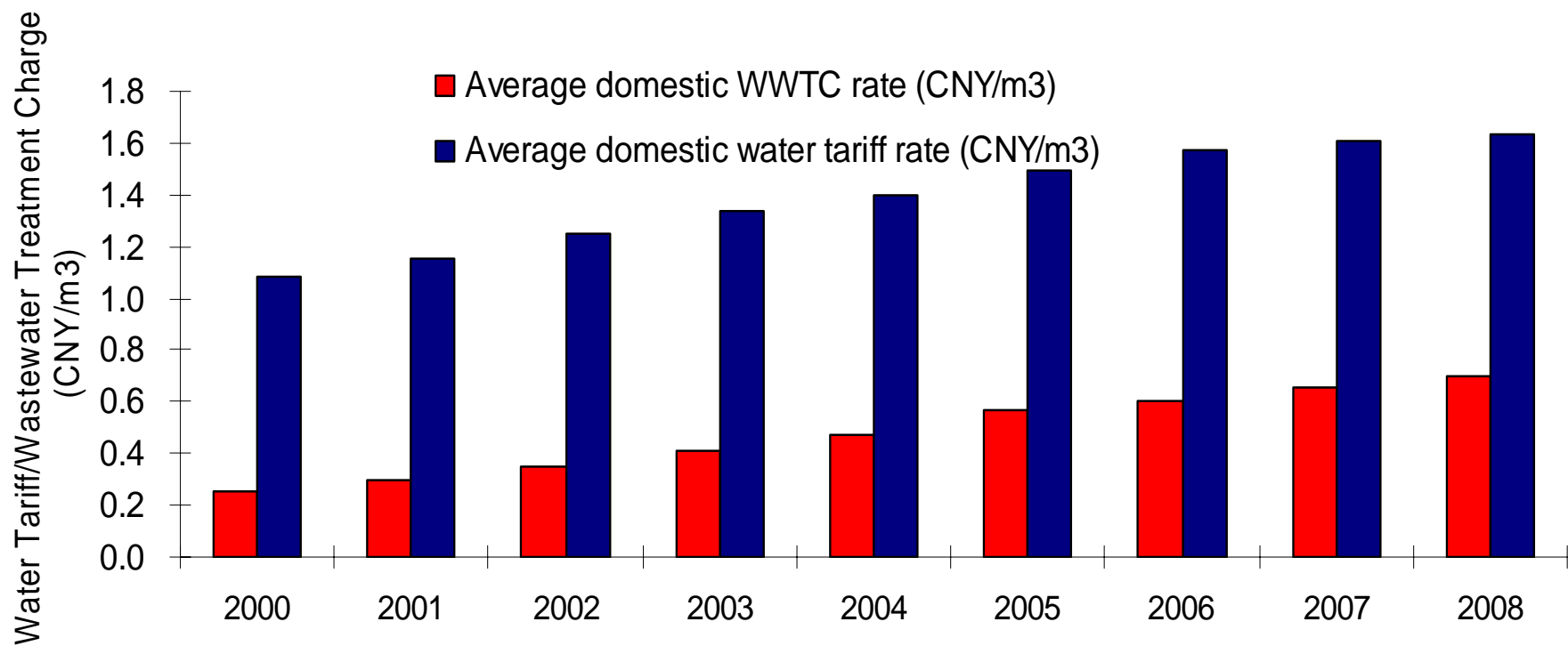
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2.1. Economic, Financial and Legal Developments

- PPPs conducted under policy papers, not specific enabling legislation
- 1995–2004: Emphasis on market opening and financing
- 2005: Emphasis shifted to regulatory arrangements
- 2009: To improve regulation, Government is conducting benchmarking analyses in the WSS sector
- 2009: Government is working on tariff reforms

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Average Water Tariff Rates and Wastewater Treatment Charges for Domestic Users in 36 Large PRC Cities, 2000–2008



PRC = People's Republic of China, WWTC = wastewater treatment charge
Source: Zhong and Mol (forthcoming).

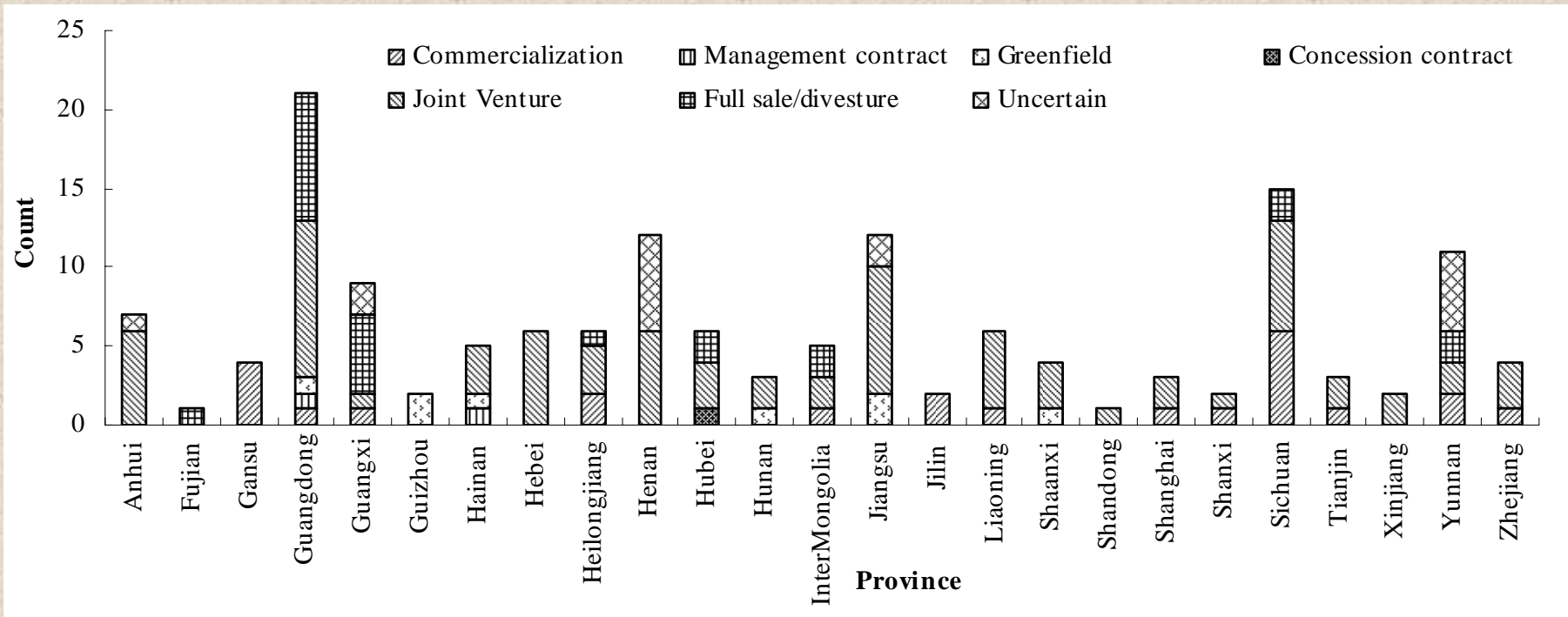
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2.2. PPPs in the PRC WSS

- Until July 2005: 152 water supply projects, and 200 wastewater treatment projects
- WSS sector reform more prevalent in southern coastal and eastern coastal provinces
- Chengdu BOT project triggered wave of PPPs

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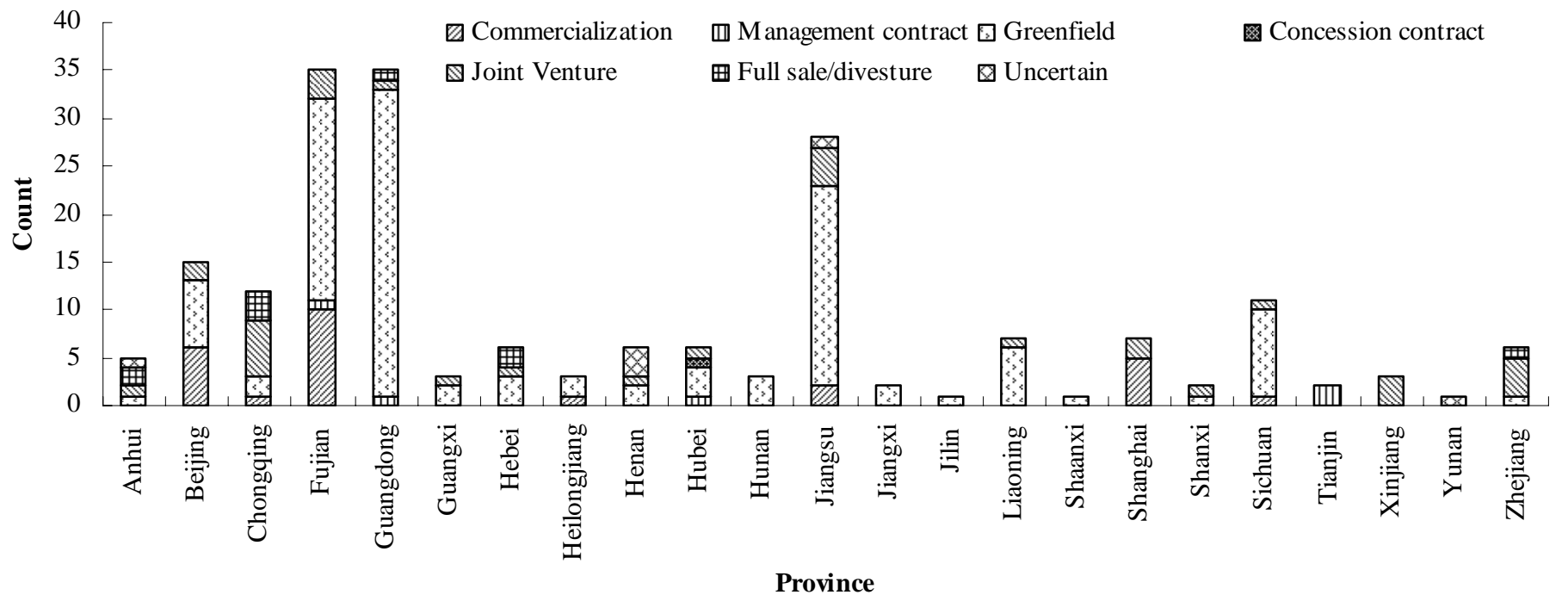
Distribution of Private Sector Participation in Water Supply Projects by Provinces (2005)



Notes: (*) No data available for Beijing, Chongqing, Tibet and Ningxia;
 (**) No data available for Guizhou, Hainan, Tibet and Ningxia
 Uncertain refers to projects with private sector participation, but with unknown form.
 Source: Zhong, Mol and Fu. 2008

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2.3. Case Study: Maanshan Water Supply (JV)

- 2002: Pilot with one Water Treatment Plant (WTP)
- 2004: Joint venture expanded to all WTPs
- Conditions for 30-year concession agreement:
 - Step-in rights
 - Social responsibilities
 - Government control over water prices
 - Annual assessments
- Positive results: financing, institutional structures, water quantity and quality

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2.3. Case Study: Macao Water Supply (Concession)

- 1985: 25-year concession contract
- Macao retains ownership of pre-1985 assets
- Private company maintains assets, makes new investments, meets service obligations
- Positive results:
 - Knowledge and technology
 - Improved water quality (access and provision)
 - Decreased leakage losses
 - Maintained inflation-adjusted tariffs

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3. Conclusion and Lessons

- PRC has embraced PPP approaches, since the Chengdu BOT project
- In 2007, estimated that PPPs accounted for:
 - 20% of water supply capacity
 - 70% of wastewater treatment capacity
- Lesson 1: Balance tariff levels, investor profits and government subsidies
 - Most unsuccessful PPPs failed due to resistance following sharp price increases and job losses
 - Take care at outset to consider acceptability of tariff increases, to manage expectations and to communicate likely impacts

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3. Conclusion and Lessons

- Lesson 2: Select most suitable PPP model for local economic conditions and tariff levels:
 - Greenfield (e.g., BOT) approaches appear to be best taken when tariffs are insufficient and there is a resulting viability gap, especially in the wastewater sector
 - Joint ventures are often used where high tariffs prevail, particularly in the water supply sector
- Lesson 3: Crucial to establish systematic and comprehensive government regulatory framework
- Lesson 4: Important to better identify the risks that are inherent in the differing PPP models and ensure better allocation of these risks between participants

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3. Conclusion and Lessons

- Recommendation 1: Accelerate PPP legislation for the PRC WSS sector
- Recommendation 2: Encourage non-investment approaches (e.g., management, affermage, lease, design-build-operate arrangements)
- Recommendation 3: Improve governance and regulation, including a benchmarking system for the WSS sector

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- Thank you