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Infrastructure Development
and
Poverty Reduction in China

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Outline

- Introduction and Motivation
- CGE Model Construction
- Scenarios and Results
- Conclusions

Introduction

- "China's record of economic growth and poverty reduction has been extraordinary" – World Bank
- In the two decades since the economic reform started
  - the economy has grown more than fivefold
  - average income per capita has quadrupled
  - 270 million Chinese have risen from absolute poverty
- Policies and measures in poverty reduction
  - Agricultural market reform
  - Residential entitlement
  - Development of township business
 - Infrastructure and other public works employment

Motivation

Infrastructure is well known for its contributions to economic growth, but how can it reduce poverty?

- ➢ Macroeconomic effects:
  - ➢ Asset and public good re-distribution
  - ➢ Public works employment ("Work Relief") – Both urban and rural infrastructure are low-skill intensive.
- ➢ Market access: Reducing distribution margins benefits both producers and consumers, and can be very pro-poor if investments are targeted at the rural sector
- ➢ Growth externalities: Technology diffusion, supply chain articulation, human capital development, etc.

Example 1: Transportation Infrastructure and Poverty Rate
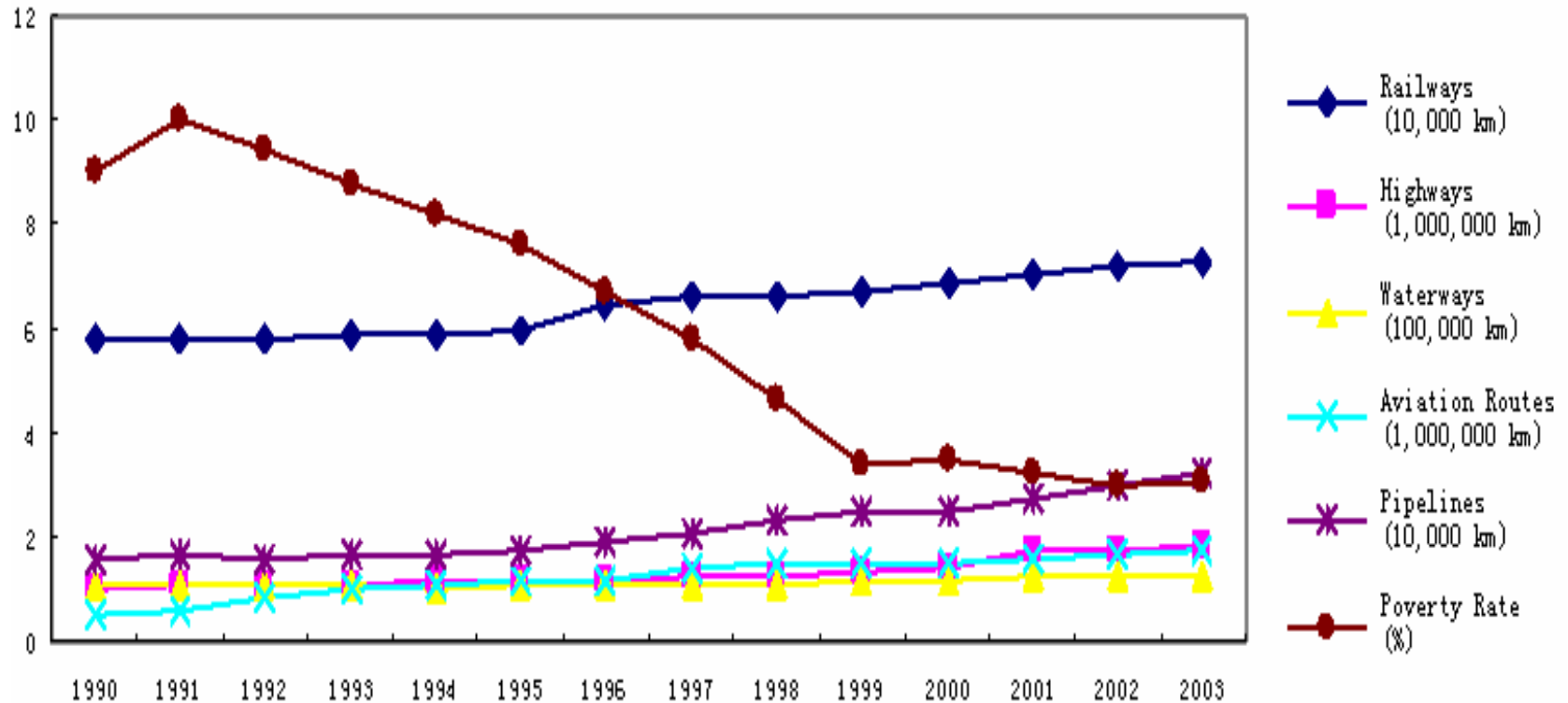
Example 2: Post & Telecom Infrastructure and Poverty Rate
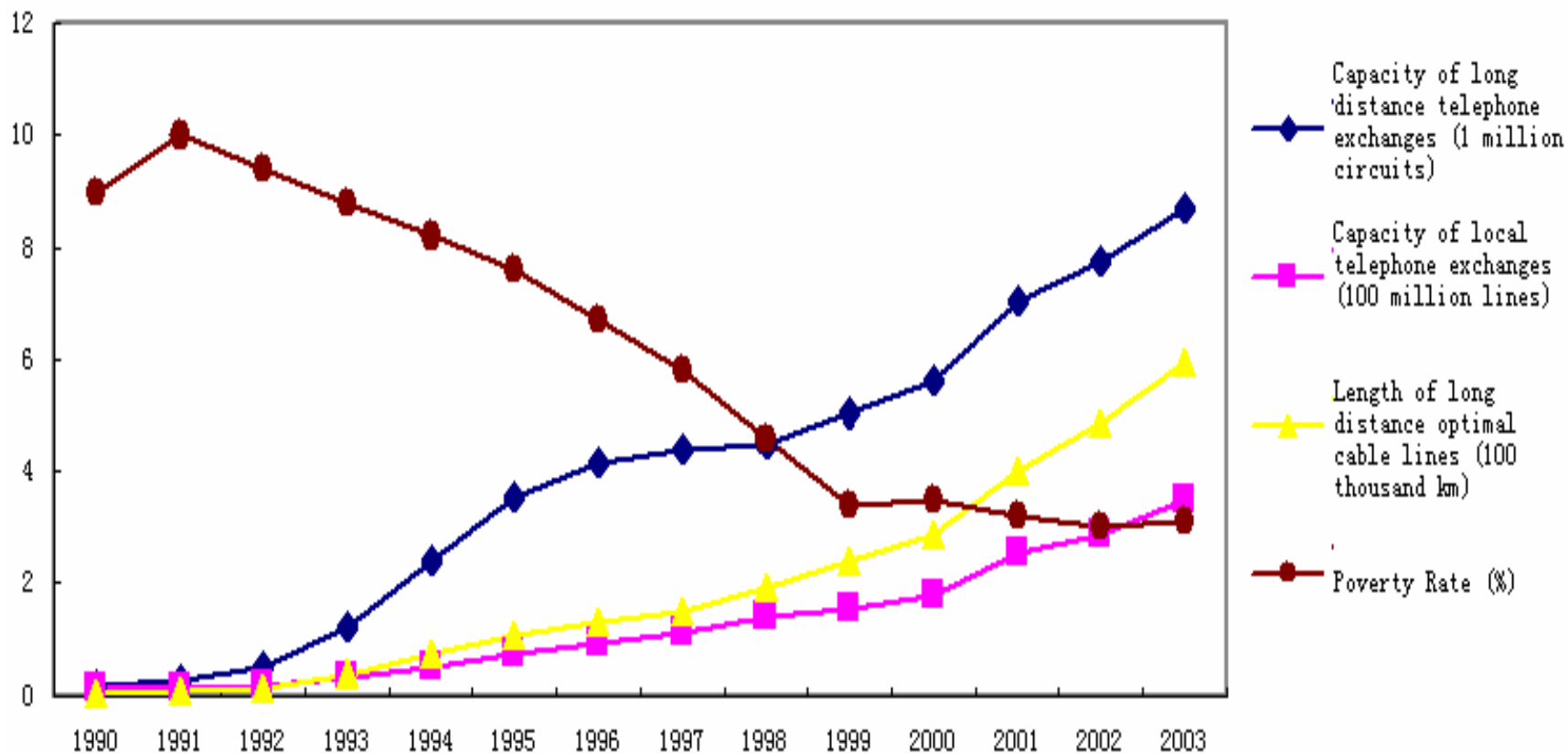
CGE Model Construction

- Model Dimensions:
  - 49 sectors
  - 3 factors (labor, capital, and land)
  - 2 representative households (Urban, Rural)
- Basic Structure: Production, Income Distribution, Trade, Market Equilibrium, Macro-closure……

Important modifications

Households groups (100) by Income level and source

- ➤ Sources
  - ➤ Rural households: agriculture-specialized, income-diversified
  - ➤ Urban households: transfer-specialized, labor-specialized, income-diversified
- ➤ 20 Income levels: poorest → richest
- ■ Labor supply / Migration
  - ➤ Agriculture → non-agriculture migration
  - ➤ Rural → Urban migration

Scenarios

I. Short-term: infrastructure investments in transportation and communication sectors increase by 10%; (other investments stable)

II. Long-term: infrastructure conditions in transportation and communication sectors generally improve by 10%, which results in the migration cost reductions and labor productivity increases

Results Scenario I

Infrastructure investments increase by 10%
- GDP↑0.37%
- Total Welfare ↑ 0.36%
- Total rural-urban labor migration ↑ 4.57%
- Welfare of urban households ↓
- Welfare of rural households ↑
- Gini coefficient between rural and urban
                          households: ↓
                          among rural households:↑
                          among urban households: ↑

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Results Scenario II

- Infrastructure stock improves by 10%
  - GDP↑, Total Welfare ↑
  - Total rural-urban labor migration ↑
  - Welfare of households: depends on the migration scale
  - Gini coefficient between rural and urban
    - households: ↑
    - among rural households: ↓
    - among urban households: ↓

Conclusion

- Infrastructure investment can directly stimulate the macro economy, and help poor people share the fruits of growth. ?The situation of income distribution is also improved.?

- Infrastructure itself makes many indirect contributions to growth that can benefit the poor, such as commodity and labor market access.

- Even when properly targeted, infrastructure's full contribution to poverty reduction depends on many related policies, such as creating more nonagricultural employment opportunities, loosening residential constraints, etc.

Thank you!