



Foreign Direct Investment, Absorptive Capacity and Regional Innovation Capabilities:

Evidences from China

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Channels for FDI impact on regional innovation

- Greater R&D inputs (direct)
- Spillovers (linkages, demonstration, labour turnover)
- Competition effect
- Innovation efficiency

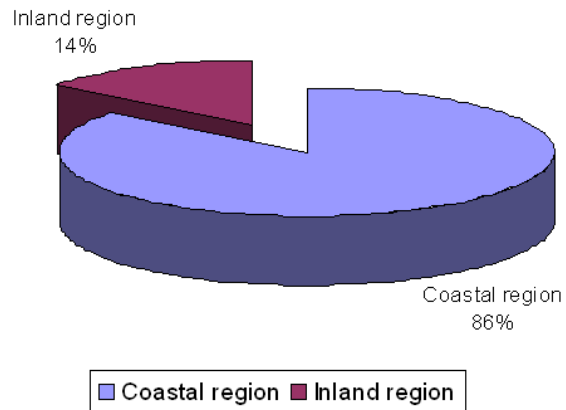


Pre-conditions for a significant innovation effect of FDI

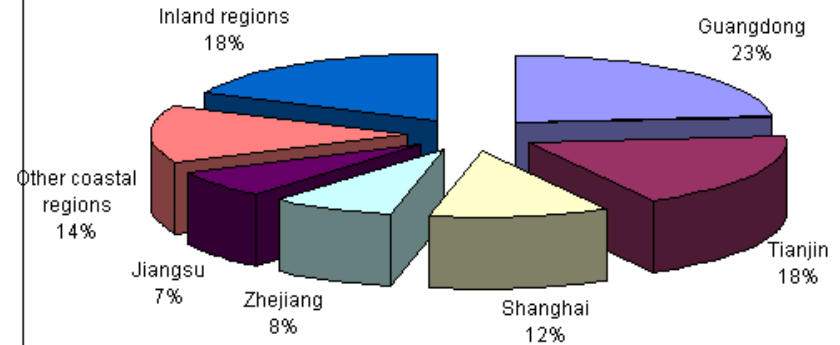
- **Absorptive capacity**
(human capital, R&D)
- **Complementary assets**
(infrastructure, industry structure, institutions)
- **Linkages**

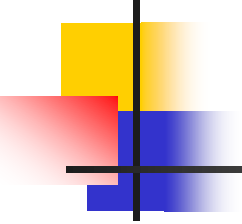
FDI and innovation in China

Regional Distribution of FDI inflows 2003



Regional distribution of number of invention applications, 2004



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- Study 1: regional level panel data
(28 regions, 1998-2004)
 - Study 2: firm-level panel data
(60,000 firms, 2001-2005)



Findings

- FDI has contributed significantly to the overall regional innovation capacity in China.
- FDI is also positively associated with regional innovation efficiency.
- The strength of this positive effect depends on the availability of the absorptive capacity and the presence of innovation-complementary assets in the host region.
- The increased regional innovation capabilities contribute further to the regional economic growth.
- FDI plays a leading role in the high-tech sector; but indigenous firms take a lead in low- and medium-tech sectors.



Implications

- The quality and type of FDI do matter.
- Diverging regional competitiveness
- A large role remains for government policies
 - Enhancement of local absorptive capacity
 - Invest in human capital and R&D
 - Development of complementary assets
 - Infrastructure, institutions
 - Match the type and sector of FDI with local industry structure and development strategy
 - FDI from industrialised countries more effective for high-tech industries. Technology embedded in South-South FDI more appropriate for LDCs.

Empirical evidence: FDI and regional innovation capacity

Knowledge production function:

$$Y_{it} = \alpha + \beta RDS_{it-1} + \lambda RDP_{it-1} + \gamma HC_{it-1} + \delta FDI_{it-1} + \varepsilon_{it}$$

$$Y_{it} = \alpha + \beta RDS_{it-1} + \lambda RDP_{it-1} + \gamma HC_{it-1} + \delta FDI_{it-1} + \theta ABC_{it-1} * FDI_{it-1} + \varphi CA_{it-1} * FDI_{it-1} + \varepsilon_{it}$$

Y=number of patents per 10thousand population

RDS=R&D to GDP ratio (year t-1)

RDP=R&D personnel to total population ratio

HC=% of population with 15 years education

FDI=FDI intensity in industry

ABC: absorptive capacity

CA: complementary assets

Data: Panel data, 31 provinces / M. cities, 1998-2004