

# China's Industrial Capabilities

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# Conceptual Framework (John Sutton)

- Capabilities  $\leftrightarrow$  sales to global markets
- How does R&D affect capabilities?
- How do capabilities affect market share?
- Window of capabilities
- Impact of industry characteristics

$\sigma$   
Linkages Across Submarkets

$\beta$   
Effectiveness  
of Capability  
Building

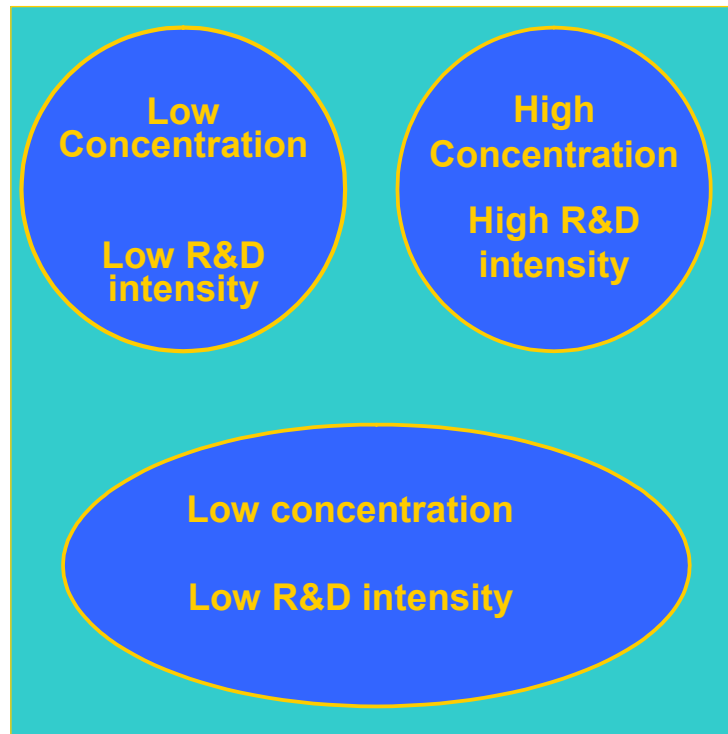


Figure 1: Industry Characteristics

$\sigma$   
Linkages Across Submarkets

$\beta$   
Effectiveness  
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Building

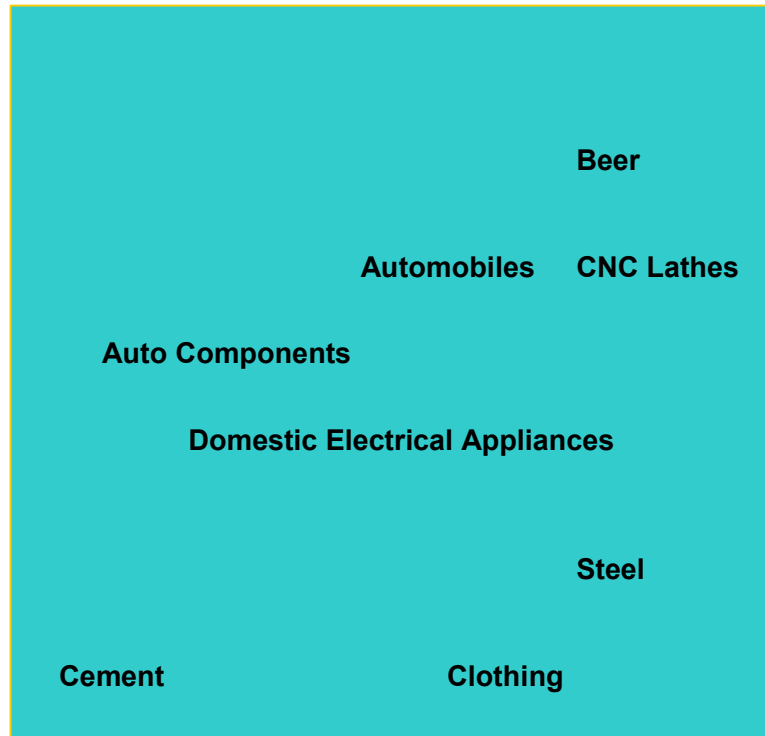
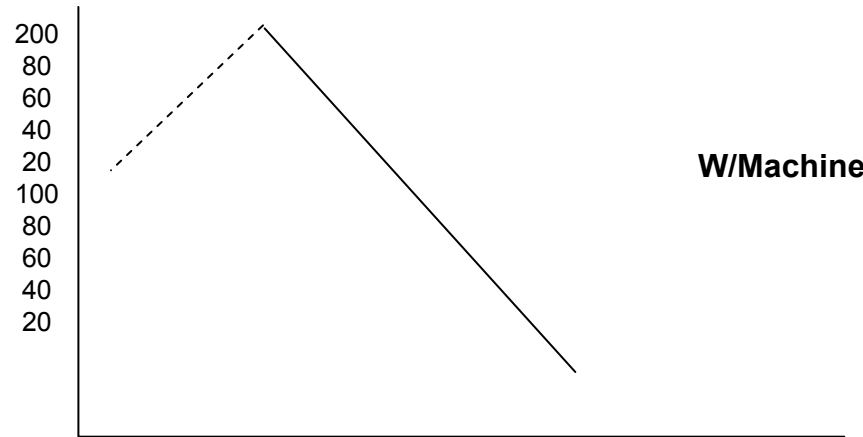
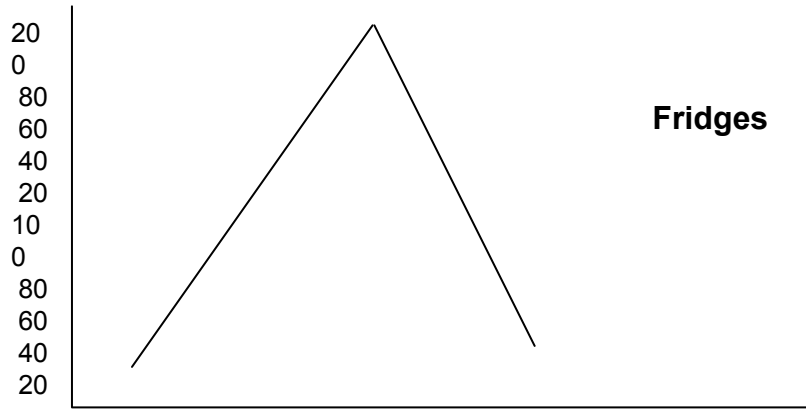


Figure 2: Industry Characteristics: Example

# The New Industries

- Rising capabilities, along with
- Excess entry (Klepper et al)
- Shake-out/escalation (Klepper, Sutton, etc.)
- Examples: Autos, Televisions





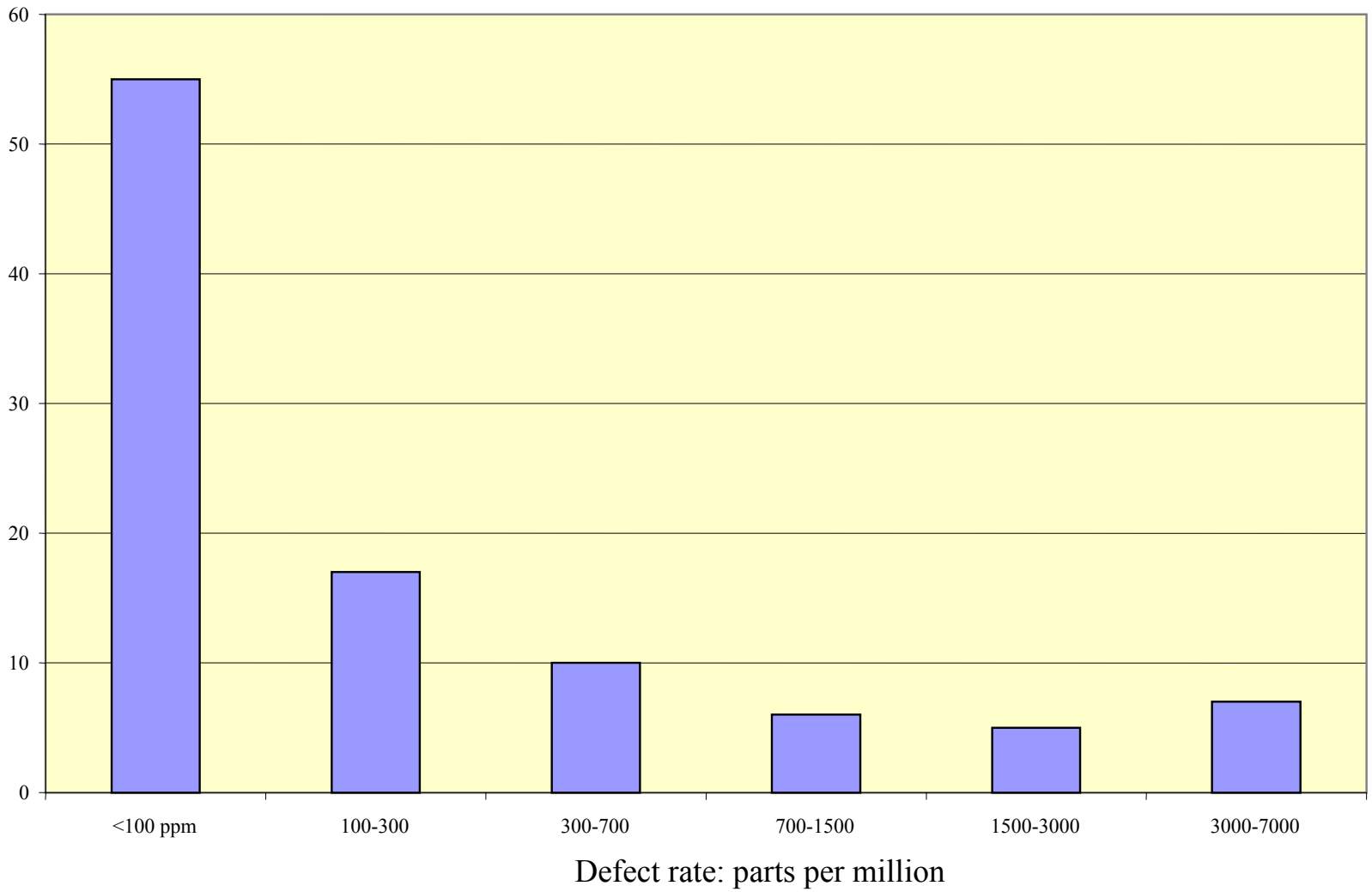
**Color TVs**

# Upgrading Mechanism: Auto Sector

- Direct investment by global assembly and component firms
- Chinese firms enter into joint ventures
- China joins global auto parts supply chain
- Institutional structure supports transfer of quality standards and best practice
- Rising demand + M&A → scale economies
- New twist: Chinese firms going global

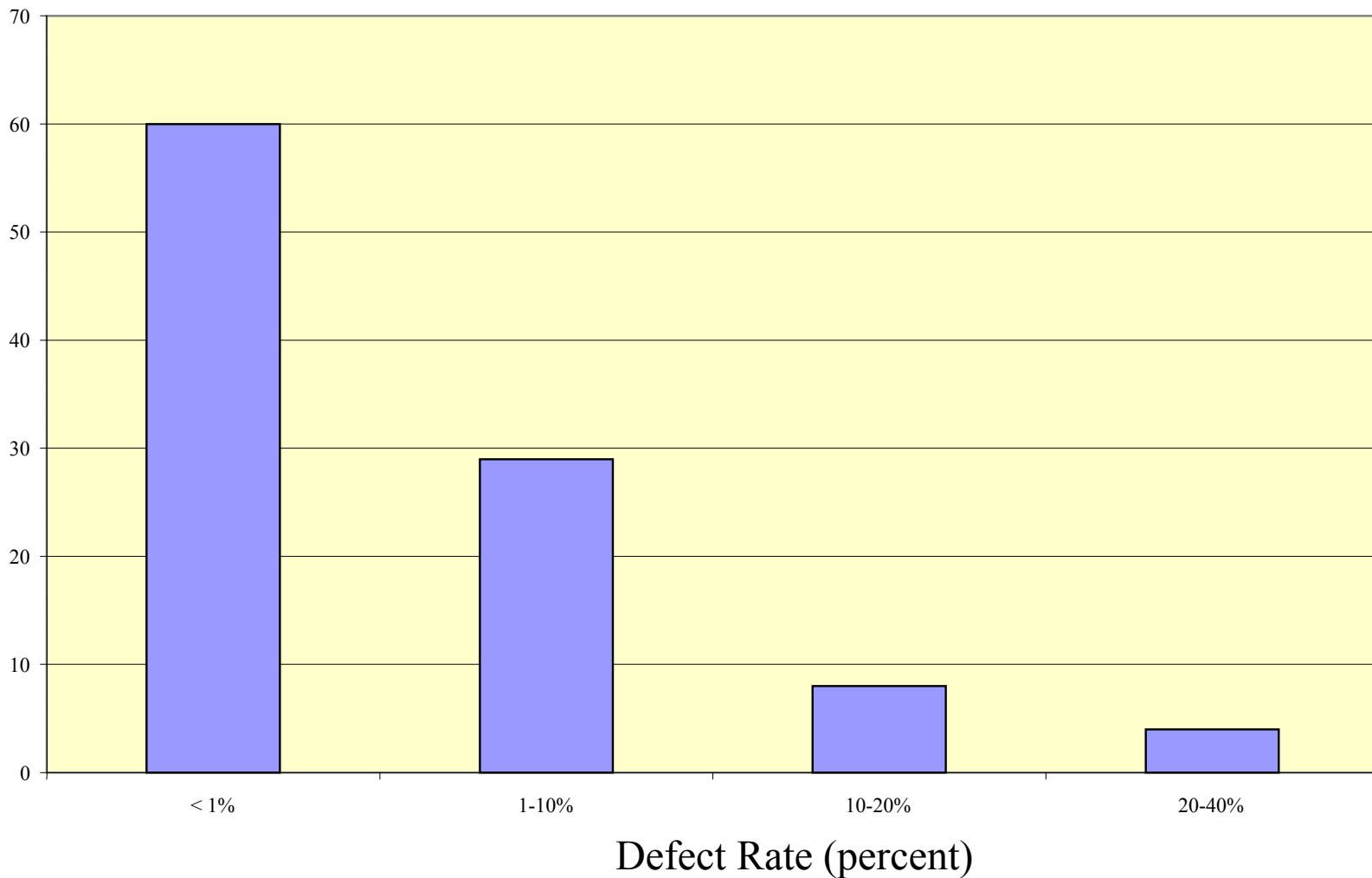
Number of Component Mak

## Defect Rate for 100 Component Suppliers to a Multi-national Car Maker



## Defect Rates for 101 Component Suppliers to a Chinese Maker of Steering Gear

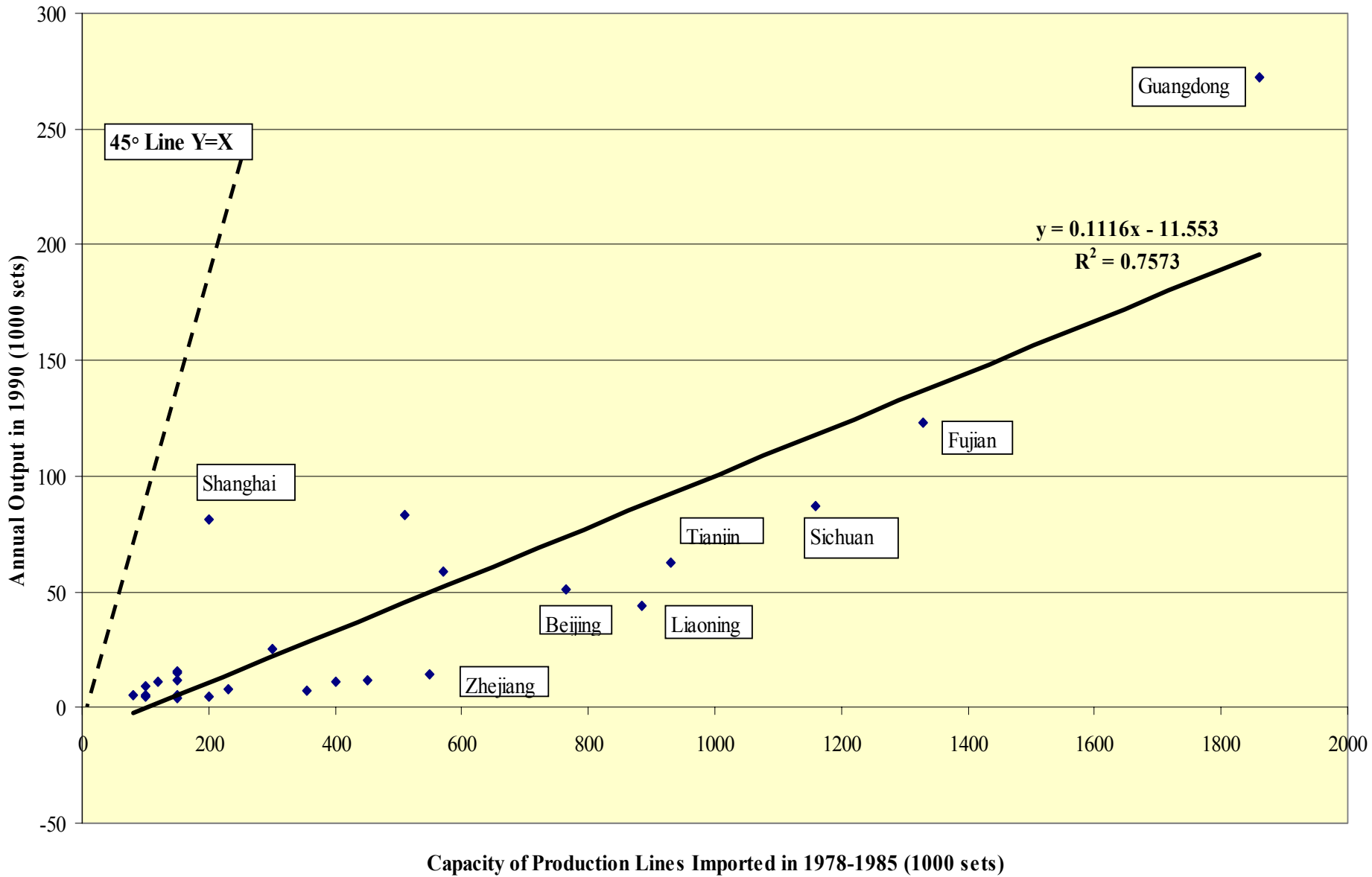
Number of firms



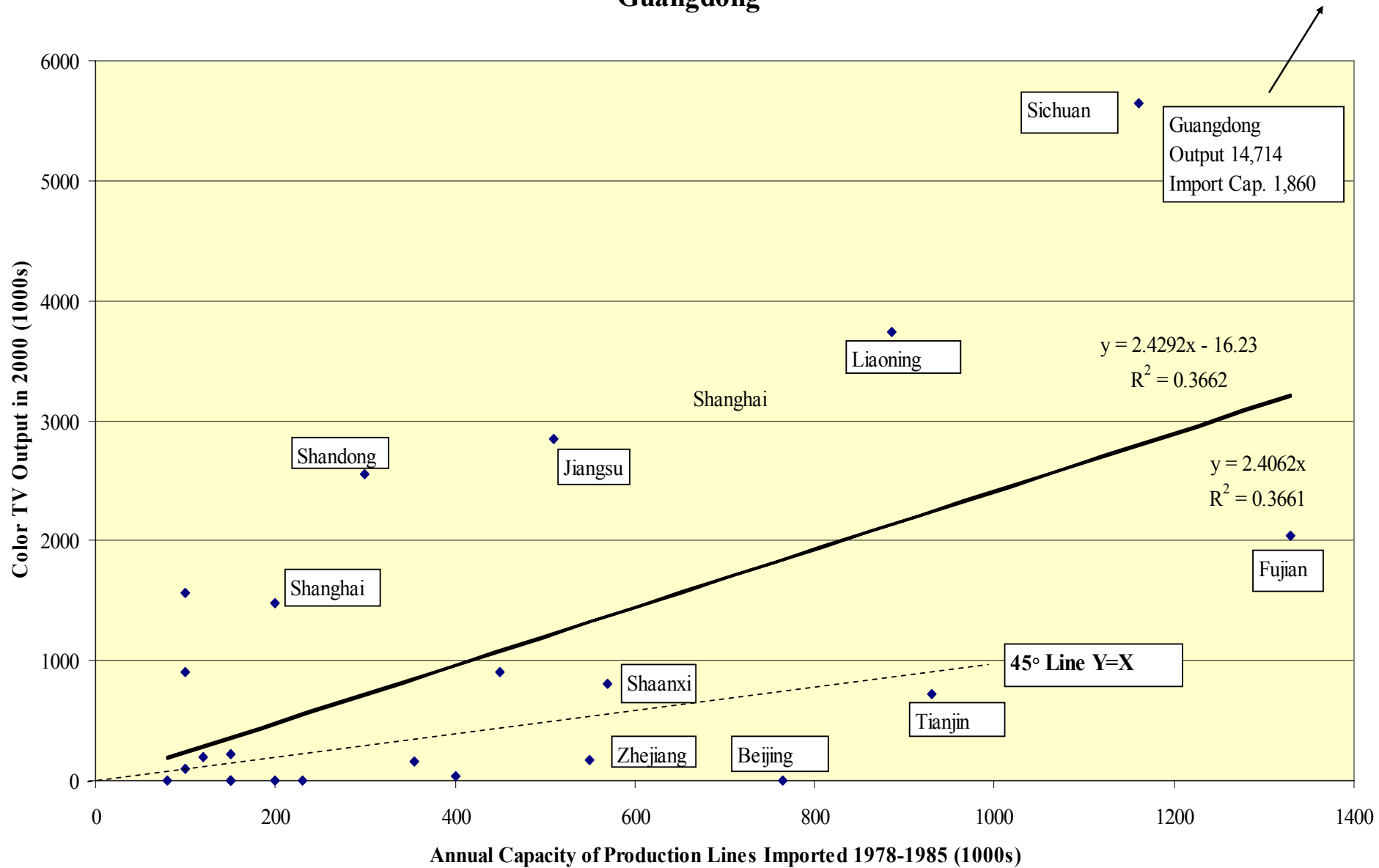
# Upgrading Mechanism: TV Sector

- Massive import of production lines
- Direct competition with local JV firms
- Fierce rivalry among Chinese producers
- Large-scale exports to USA etc.
- Cooperation with global market leaders for developing new products: plasma, wide and flat screen TV, etc.
- BUT – technical base remains weak

Figure TV-1.  
China: Investment and Production of Color Televisions By Province 1: 1978-1990



# China: Investment and Production of Color Televisions by Province 2: 1978-2000 omitting Guangdong



# Concentration in China's TV Sector

	1994	1997	2000
CR4	45.5	56.3	47.6
CR8	62.8	73.6	76.2

# Old Industries

- Beer – rapid concentration
- Steel – big growth, gradual transformation

# Upgrading Mechanism: Beer

- Wake-up call: entry of global firms, Part 1
  - Chinese firms repulse global rivals
- M&A to gain access to scale economies
  - Rapid concentration of production
- Entry of global firms, Part 2
  - Chinese market leaders combine with global beer giants

### The Scale of Beer Producers in China (1994-2003)

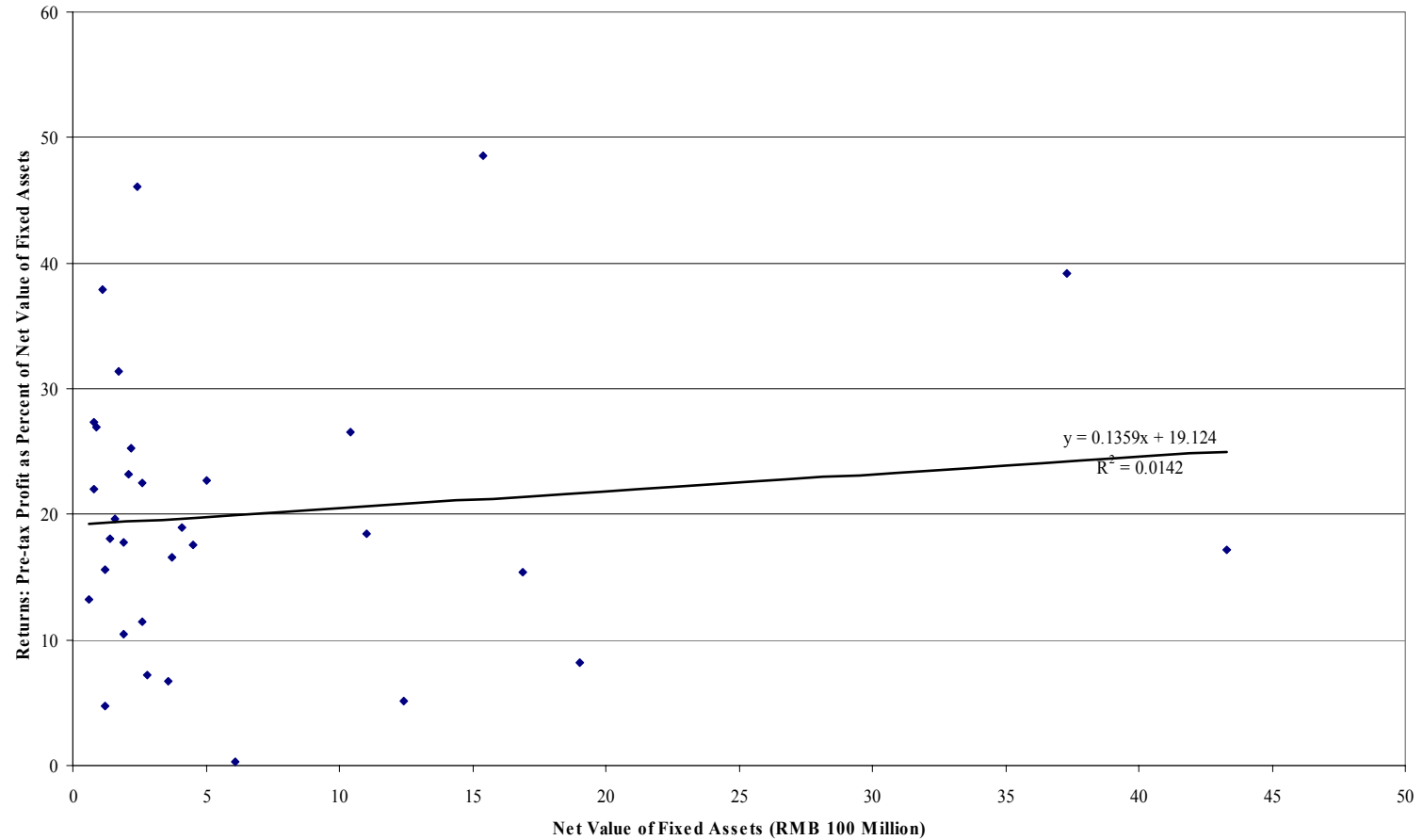
		1994	1995	1996	1997	1998	1999	2000	2003
Number of Firms		655	656	589	550	495	474	495	
Average Size (1000 tons)		21.6	25.1	30.6	34.3	40.2	44.3	45.1	
Above 200,000 tons	Number	3	7	8	13	18	19	20	18
	<b>Share (%)</b>	<b>5.4</b>	<b>12.1</b>	<b>14.5</b>	<b>21.4</b>	<b>31.3</b>	<b>35.2</b>	<b>41.8</b>	<b>60.5</b>
100,000 — 200,000 tons	Number	21	23	28	28	26	25	26	
	Share (%)	19.9	18.6	21.8	20.9	17.1	17.1	16.7	
50,000 — 100,000 tons	Number	36	44	47	57	60	62	60	
	Share (%)	16.6	19.1	18.2	20.1	21.2	21.1	18.9	
Below 50,000 tons	Number	595	552	206	452	391	368	389	
	<b>Share (%)</b>	<b>58.1</b>	<b>50.2</b>	<b>45.5</b>	<b>37.6</b>	<b>30.4</b>	<b>26.6</b>	<b>22.6</b>	

# Mechanism for Upgrading: Steel

- Interaction with equipment suppliers
- Pressure from customer requirements
- Import substitution at high end
- Big wave of mergers coming soon?
- Slowdown in autos and construction may cut profits and accelerate shakeout
  
- BUT progress linked to state enterprise reform
- scale economies elusive

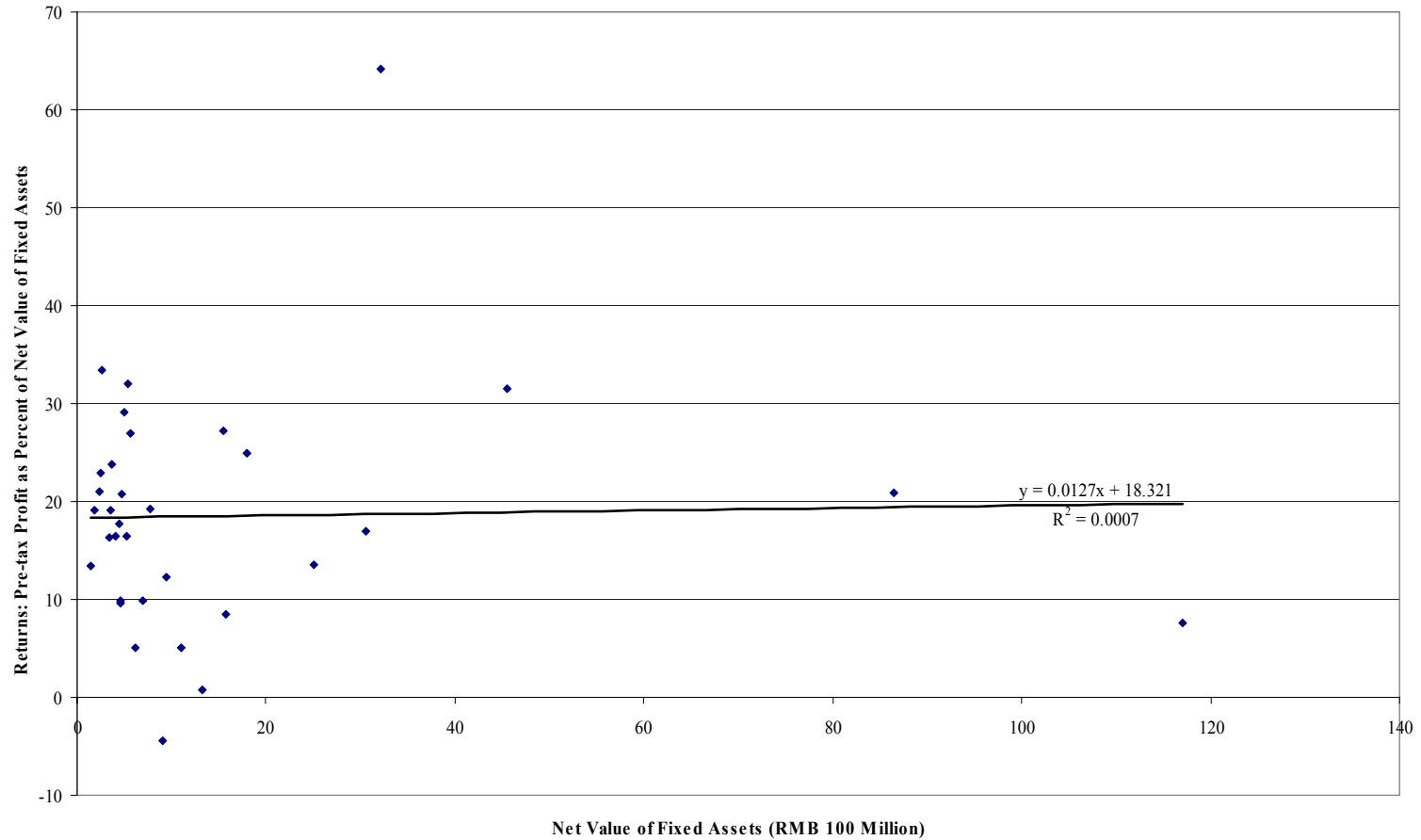
# China Steel: Scale vs. Returns at Large Plants in 1984

## 中国大型钢铁企业规模与效益- 1984



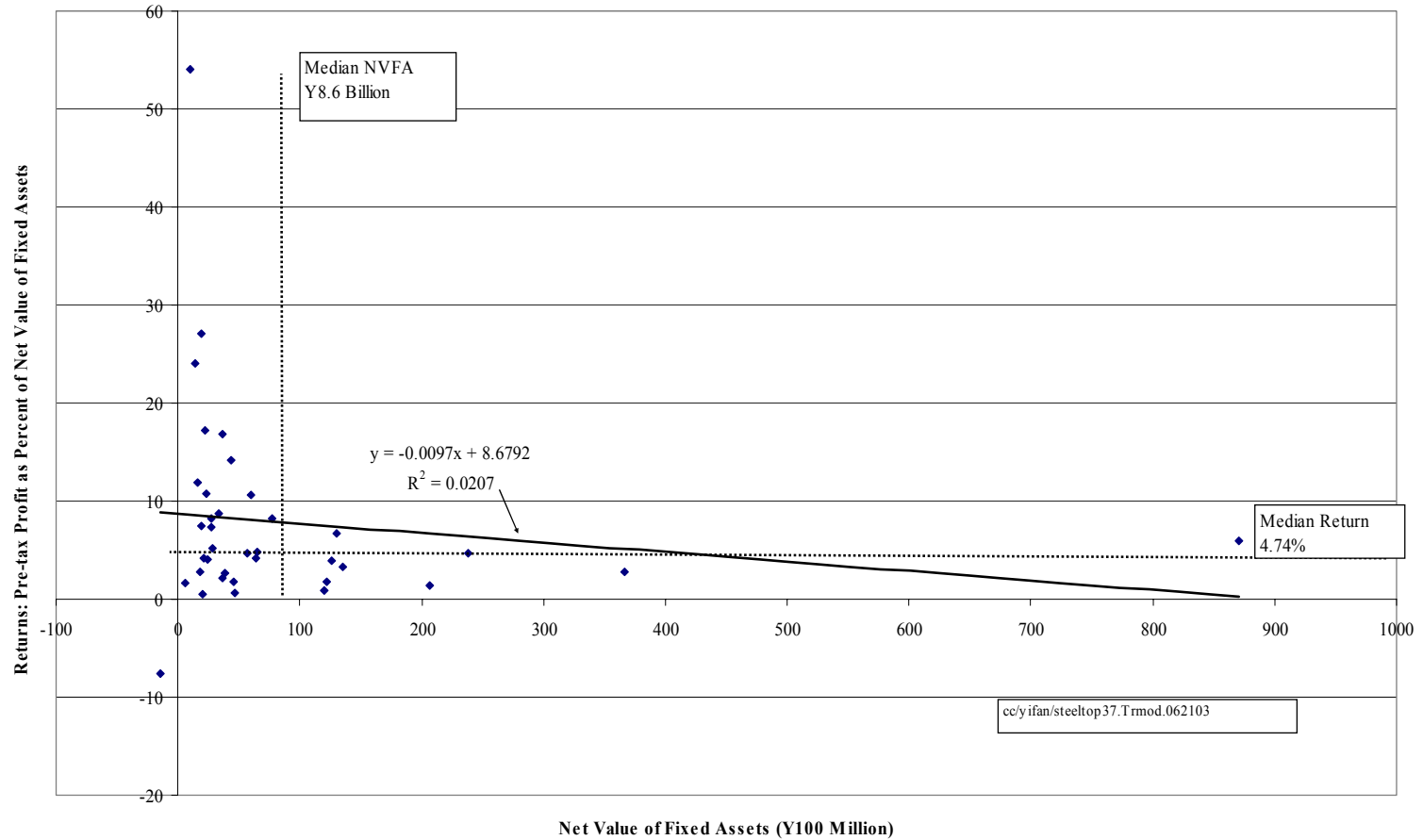
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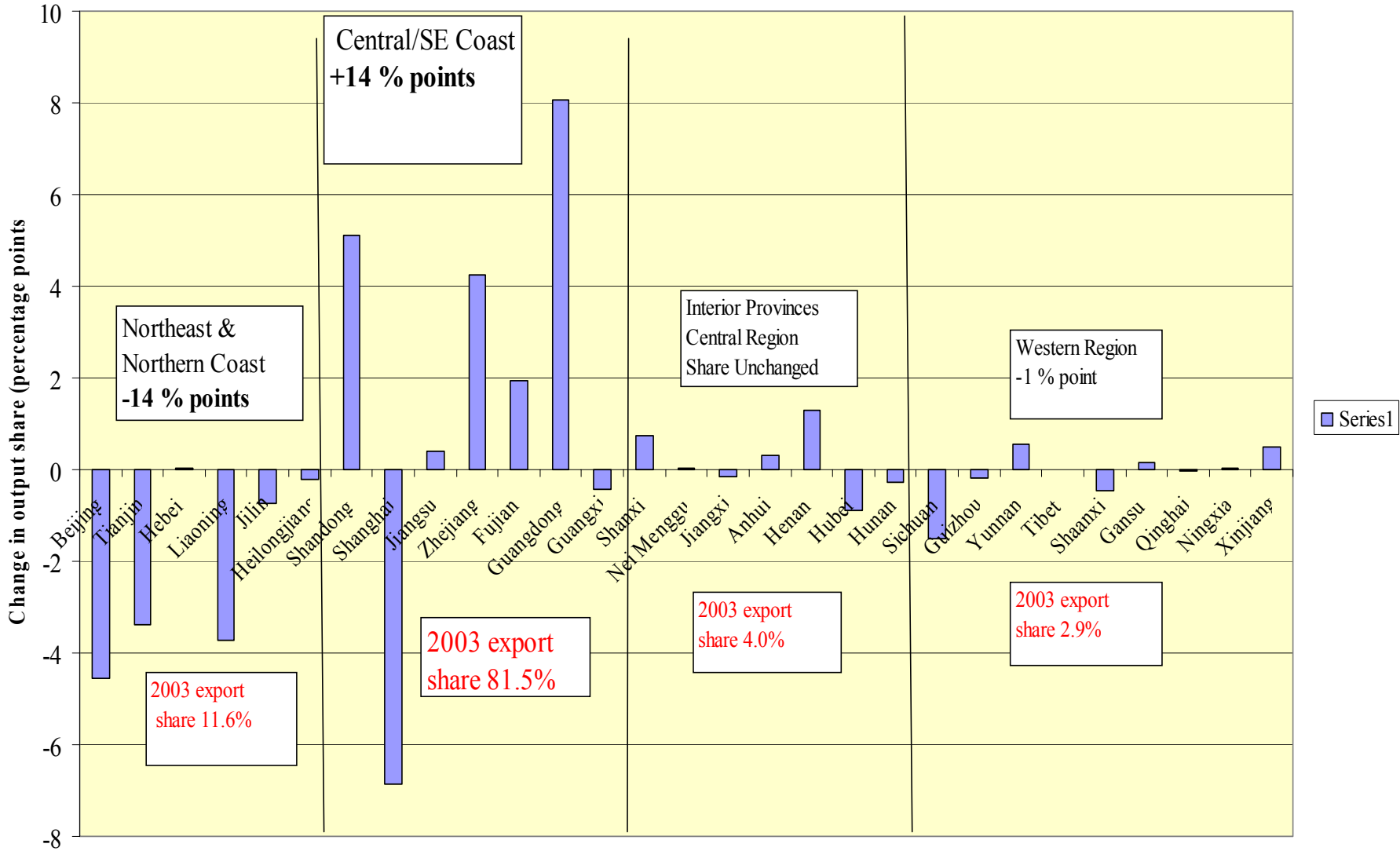


# Industrial Capabilities: Projections

- New sectors rising: ship-building, semiconductors, biotechnology, and more
- New sources of capability building
  - Outward FDI by Chinese multinationals in resources and manufacturing
  - Efforts to accelerate upgrading in interior

# Change in Provincial Shares of Industrial Output, 1980-2003

## Provincial Share in Overall Exports, 2003



# Conclusions

- Multiple links to global economy
- Ties to global economy thickening
- Upgrading mechanisms deeply rooted, now impervious to business cycle
- Possible “two front” capability expansion
- Foreign policy implications
  - Economic growth a central objective
  - Growth built on broad global market access
  - Big incentive to emphasize international cooperation