

Indian Competitiveness: Where Does the Nation Stand?

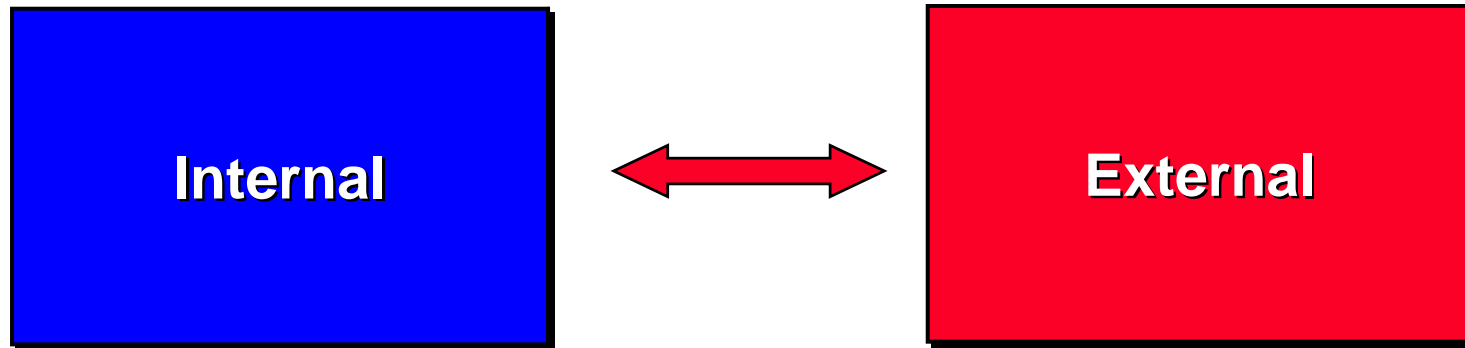
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Institute for Strategy and Competitiveness
Harvard Business School

21 January 2004
Mumbai, India

This presentation draws on ideas from Professor Porter's articles and books, in particular, The Competitive Advantage of Nations (The Free Press, 1990), "Building the Microeconomic Foundations of Competitiveness," in The Global Competitiveness Report 2003, (World Economic Forum, 2003), "Clusters and the New Competitive Agenda for Companies and Governments" in On Competition (Harvard Business School Press, 1998), and ongoing research on clusters and competitiveness. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means - electronic, mechanical, photocopying, recording, or otherwise - without the permission of Michael E. Porter.

Further information on Professor Porter's work and the Institute for Strategy and Competitiveness is available at www.isc.hbs.edu

Perspectives on Firm Success

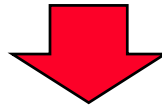


- Competitive advantage resides **inside** a company or in its industry
- Competitive success depends primarily on **company choices**

- Competitive advantage (or disadvantage) resides partly in the **locations** at which a company's business units are based
- **Cluster participation** is an important contributor to competitiveness

Indian Economic Performance 2004

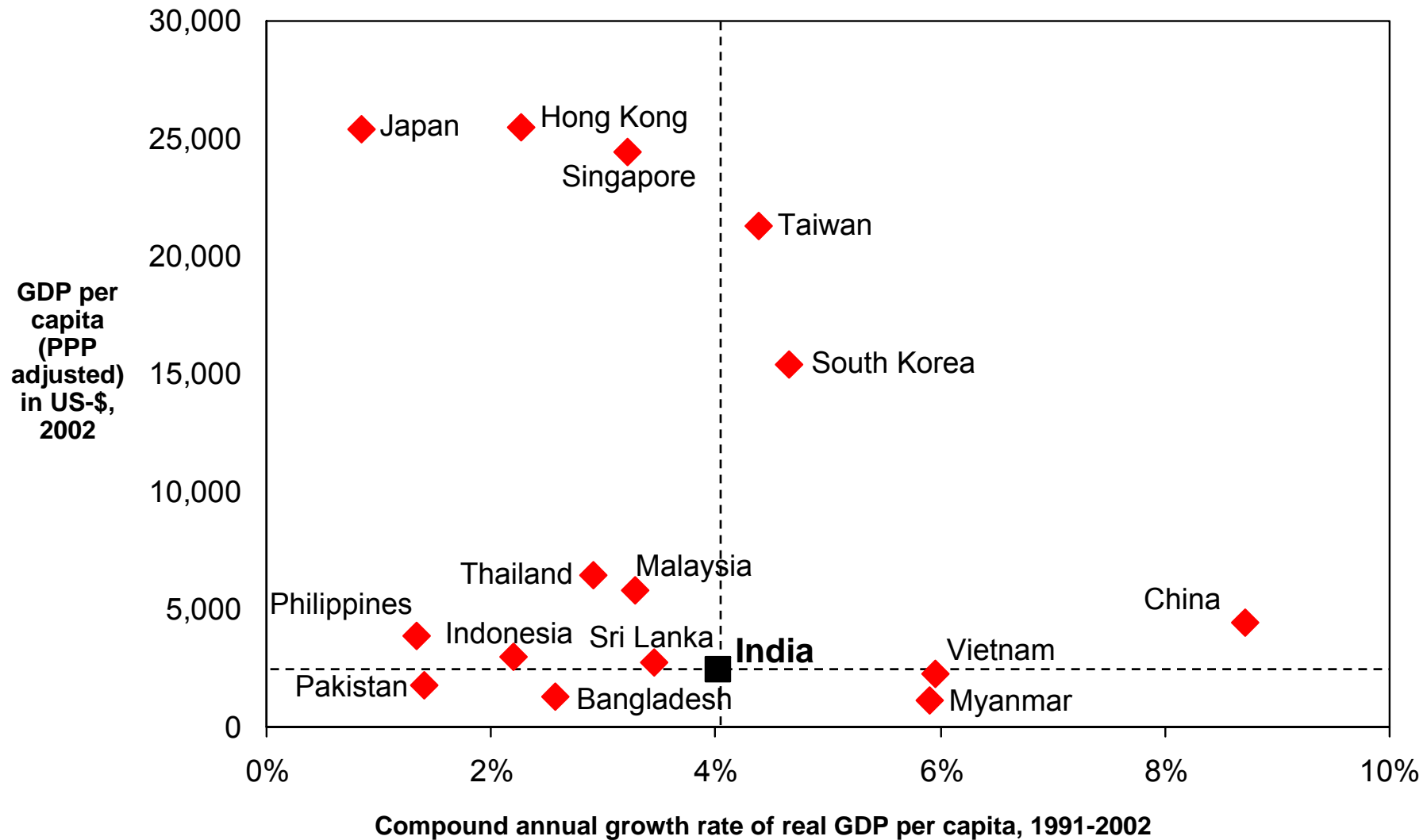
- Economic reforms in the post-1991 period have delivered economic growth rates of about 5% annually
- India's ranking in the Global Competitiveness Report has improved significantly in the last few years
- The Indian IT cluster has emerged as a leading competitor in the world market, transforming the perception of India as a competitor



- However, there are signs that the 1991 reforms are reaching the limits of their effectiveness
 - The growth trend has fallen
 - Total factor productivity growth has slowed
 - The public sector's fiscal position has again weakened
 - International market success is still dominated by a few sectors
 - The disproportionate success of the IT cluster is as much an indication of weaknesses in India's business environment as a metaphor for India overall

Comparative Economic Performance

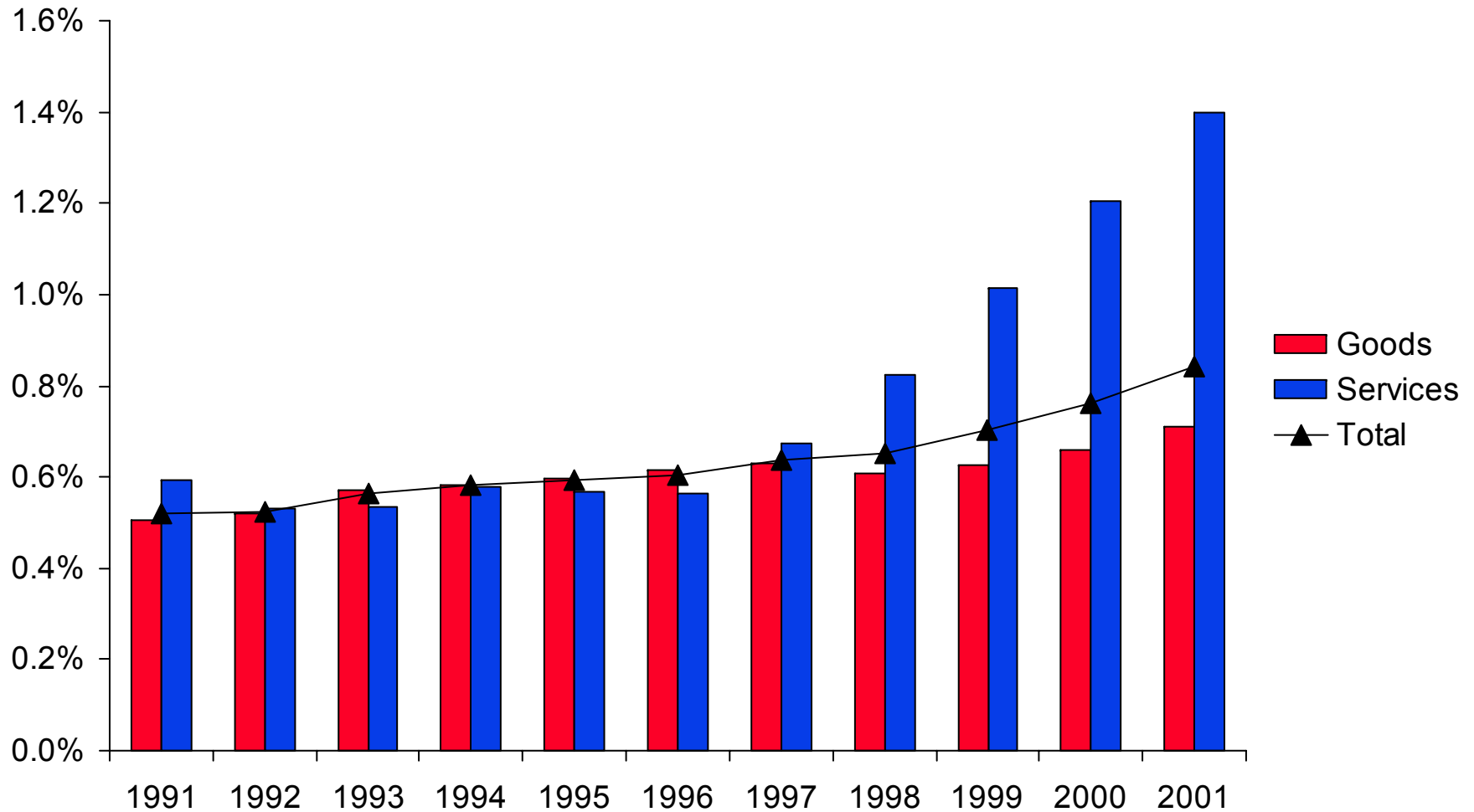
Real GDP per Capita



India's Export Performance

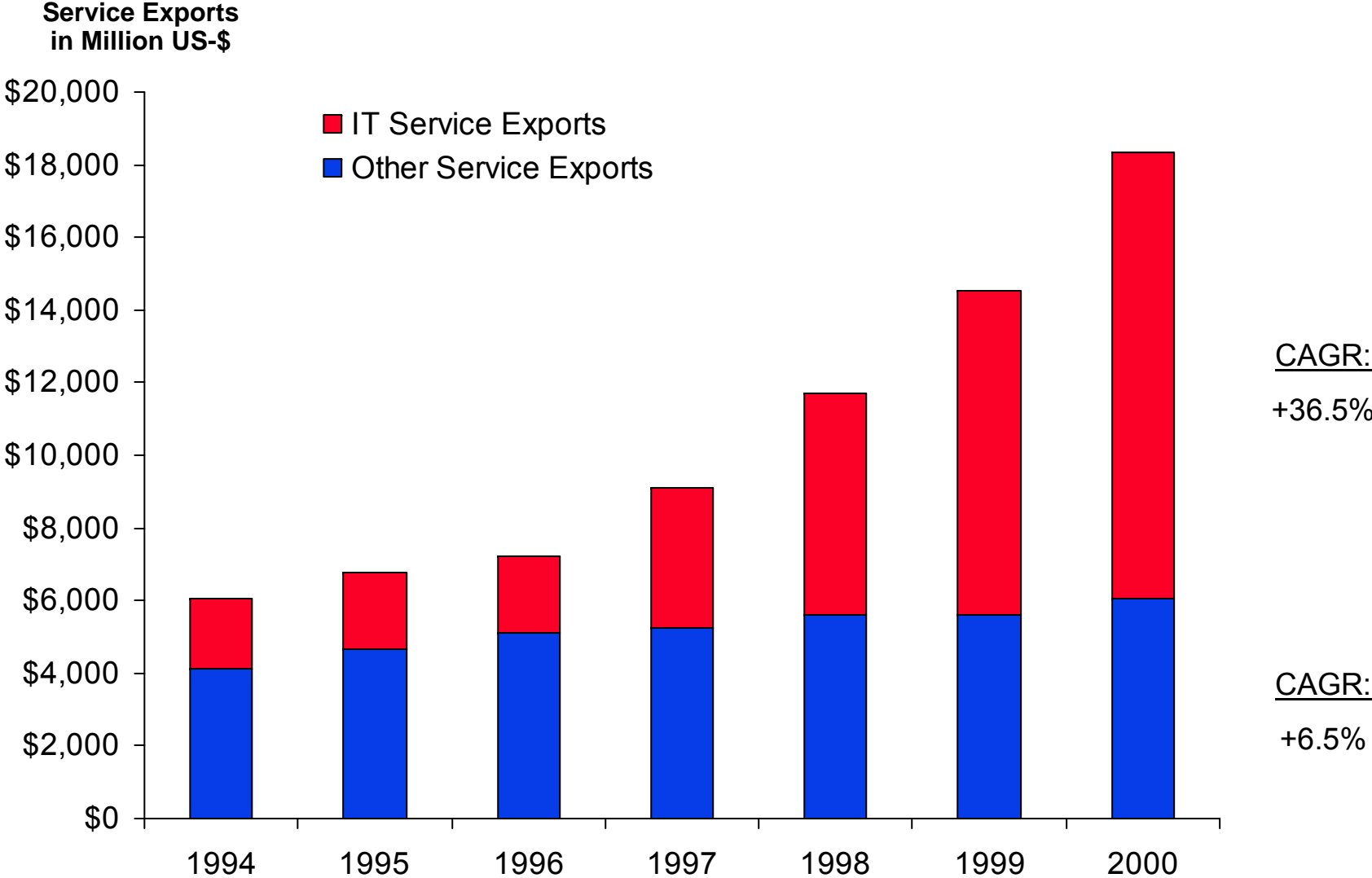
World Export Market Shares

World export share in %



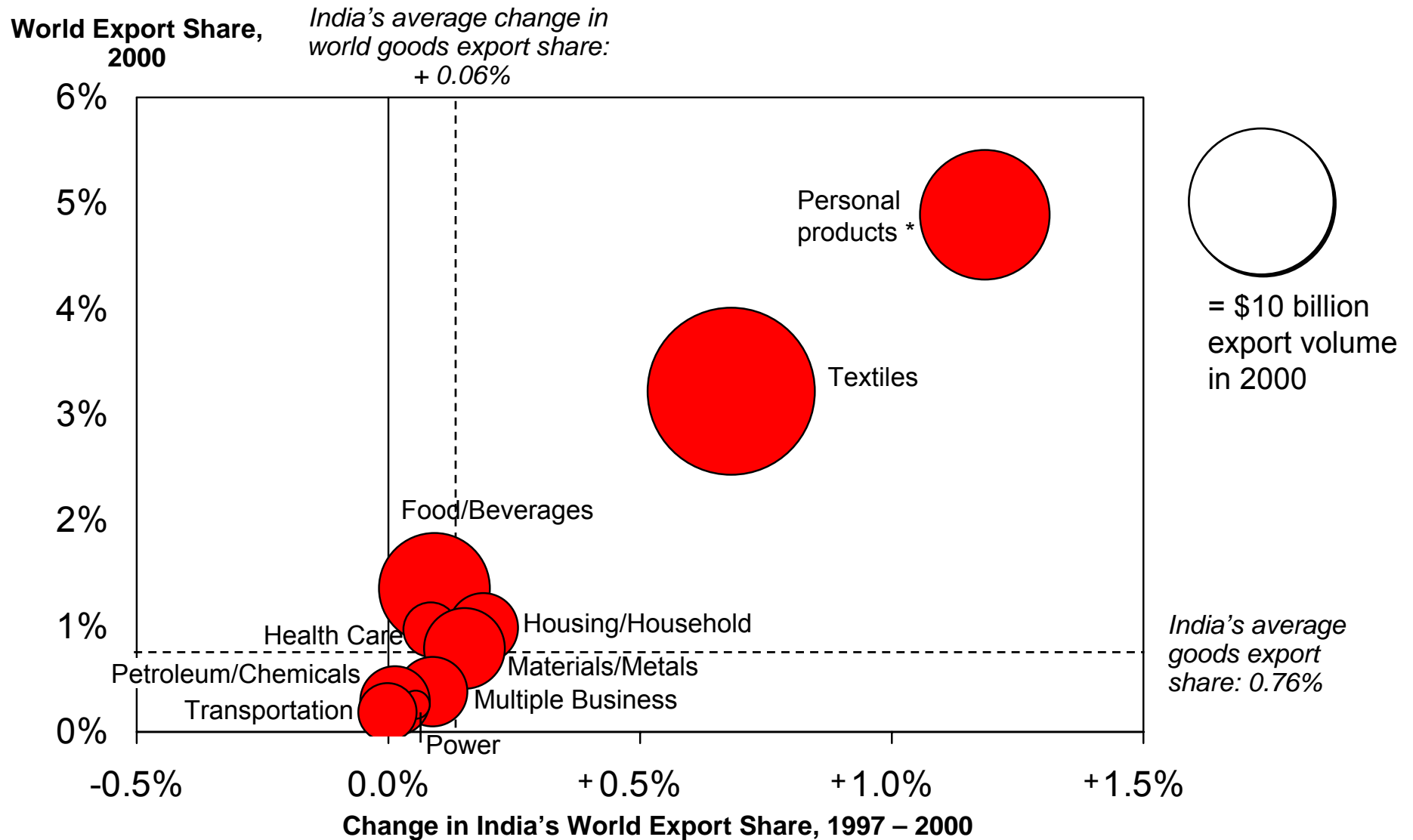
India's Service Exports

Effect of IT Services Exports



Source: IMF (2002)
 GCR India 2003 01-06-04

India's Goods Export Performance By Broad Sector 1997-2000

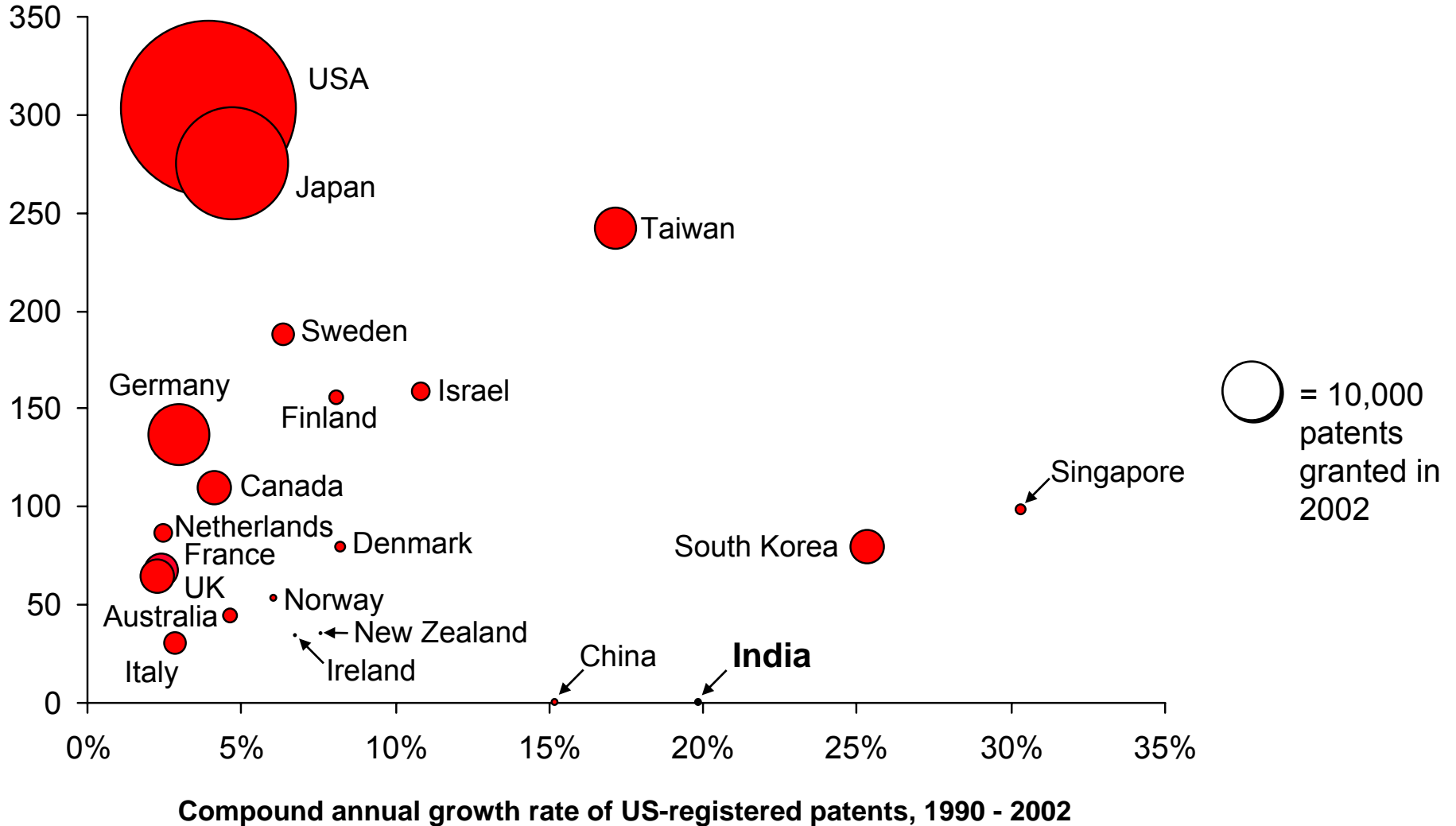


Note: 90% of exports in the category "Personal" are accounted for by Jewelry and Diamonds

Source: UNCTAD Trade Data. Author's analysis.

International Patenting Output

Annual U.S. patents
per 1 million
population, 2002



Source: US Patent and Trademark Office (www.uspto.gov). Author's analysis.

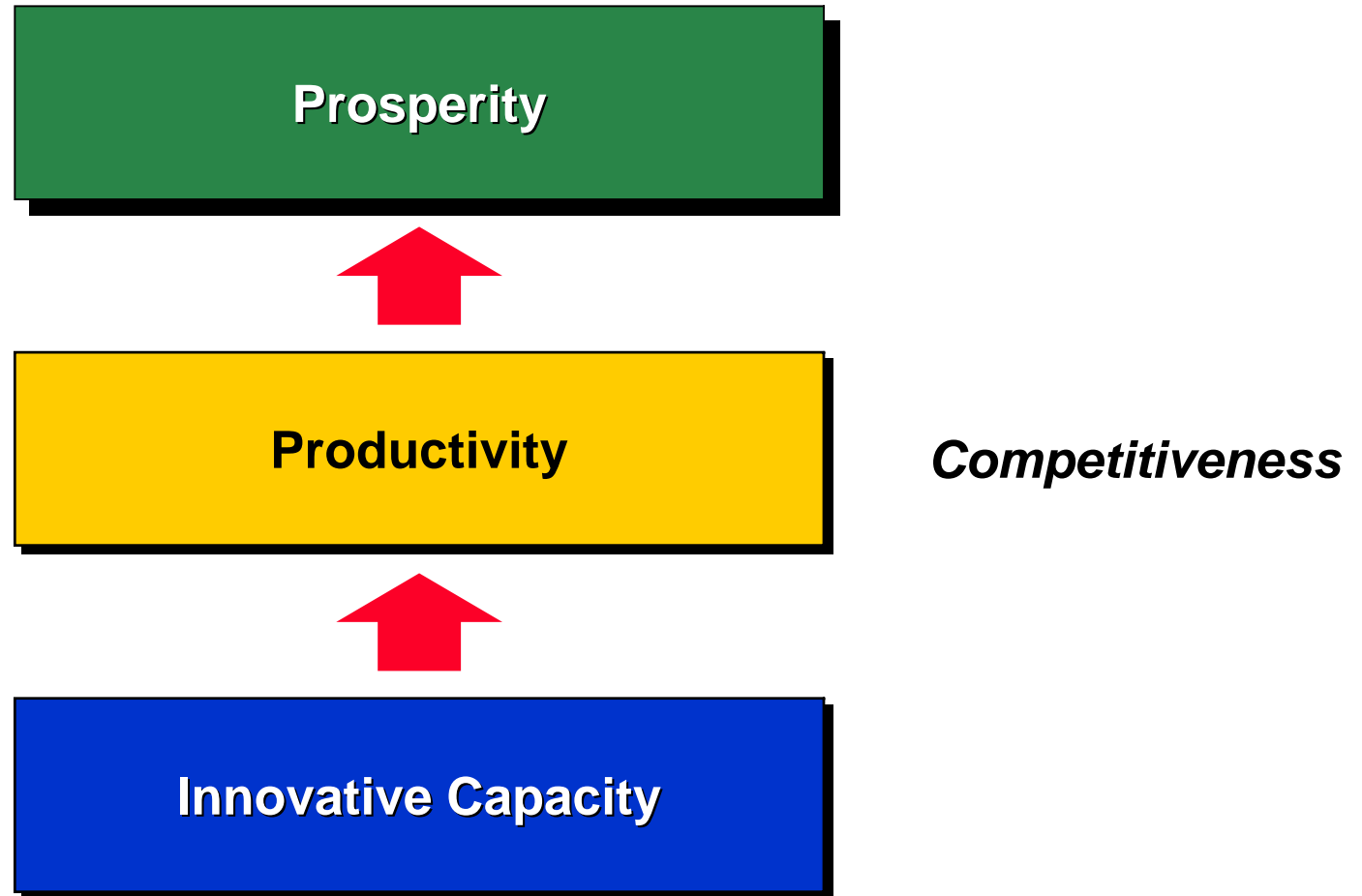
What is Competitiveness?

- Competitiveness is determined by the **productivity** with which a nation uses its human, capital, and natural resources. Productivity sets a nation's or region's standard of living (wages, returns to capital, returns to natural resource endowments)
 - Productivity depends both on the **value** of products and services (e.g. uniqueness, quality) as well as the **efficiency** with which they are produced.
 - It is not **what** industries a nation competes in that matters for prosperity, but **how** firms compete in those industries
 - Productivity in a nation is a reflection of what both domestic and foreign firms **choose to do in that location**. The location of ownership is secondary for national prosperity.
 - The productivity of **“local”** industries is of fundamental importance to competitiveness, not just that of traded industries
 - Devaluation **does not** make a country more competitive



- Nations compete in offering the **most productive environment** for business
- The public and private sectors play **different but interrelated roles** in creating a productive economy

Innovation and Competitiveness



- Innovation is **more than just scientific discovery**
- There are **no low-tech industries**, only low-tech firms
- To become an advanced economy, a nation's firms must move from assimilating technology to **creating** new technology

Determinants of Productivity and Productivity Growth

Macroeconomic, Political, Legal, and Social
Context for Development

Microeconomic Foundations of Development

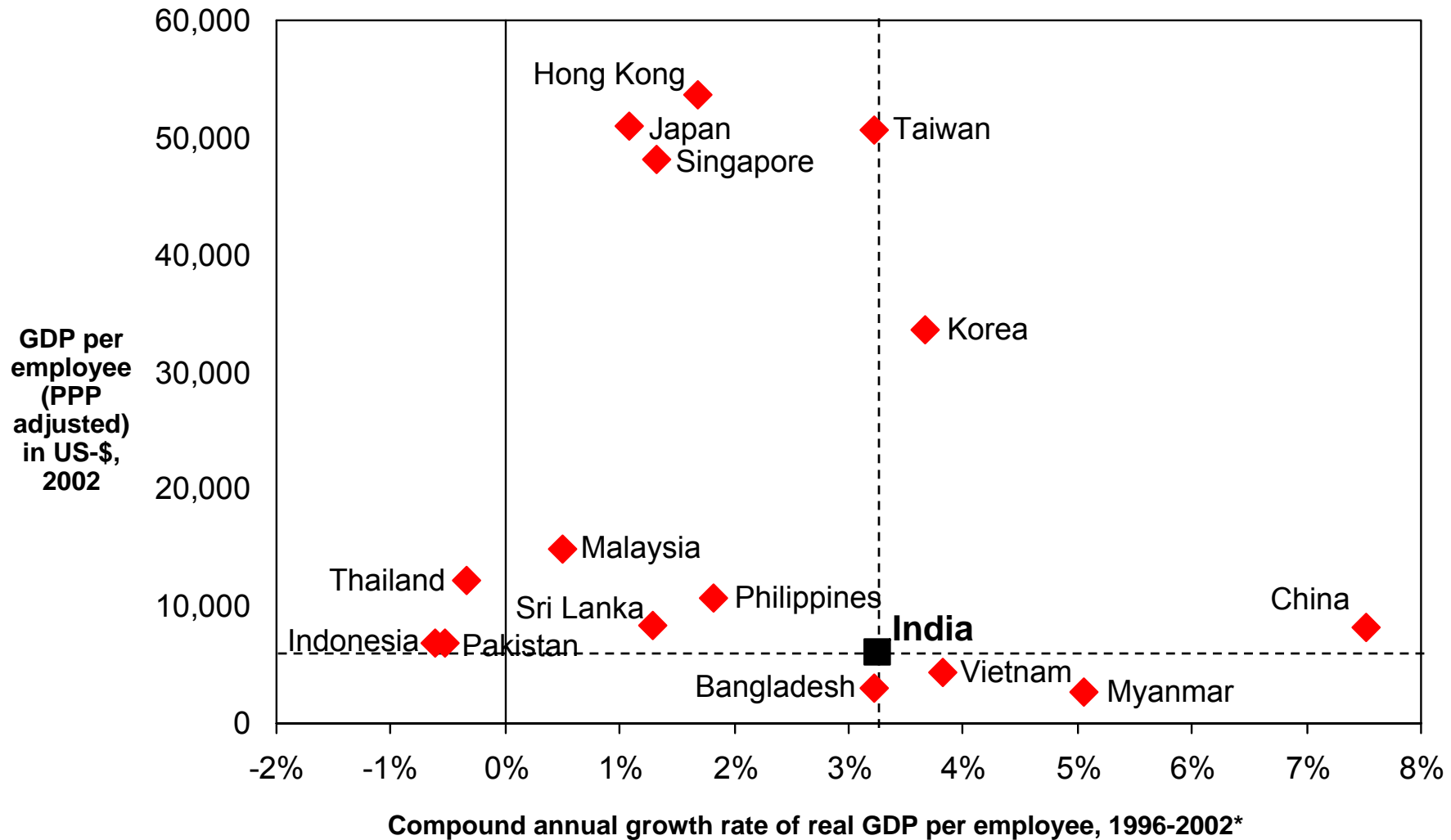
Sophistication
of Company
Operations and
Strategy



Quality of the
Microeconomic
Business
Environment

- A sound macroeconomic, political, legal, and social context creates the potential for competitiveness, **but is not sufficient**
- Competitiveness ultimately depends on improving the **microeconomic capability** of the economy and the **sophistication of local companies and local competition**

Comparative Labor Productivity Performance

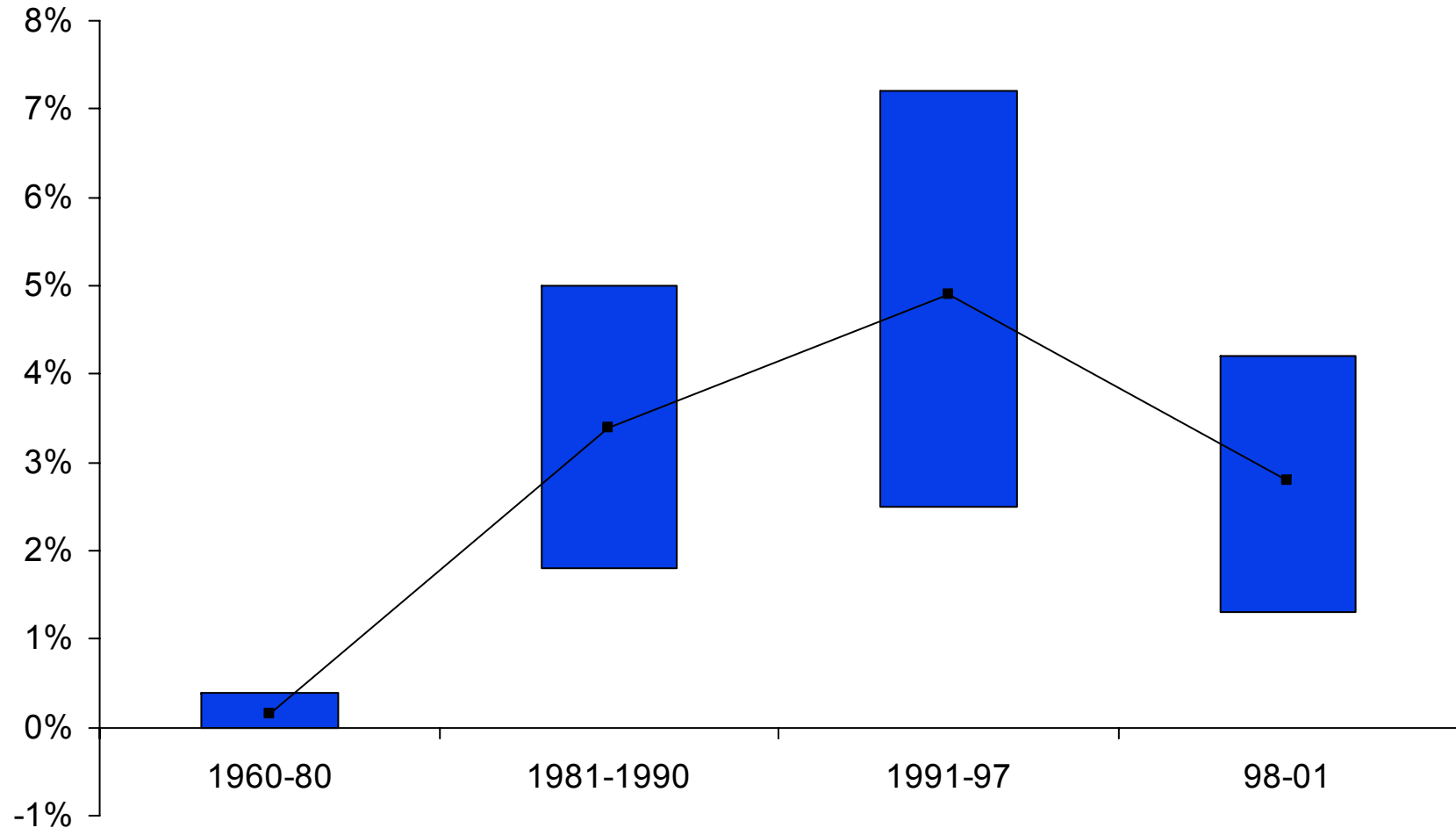


*Hong Kong CAGR based on 1997-2002
Source: EIU (2003)

Indian Productivity Growth Over Time

Total Productivity Growth

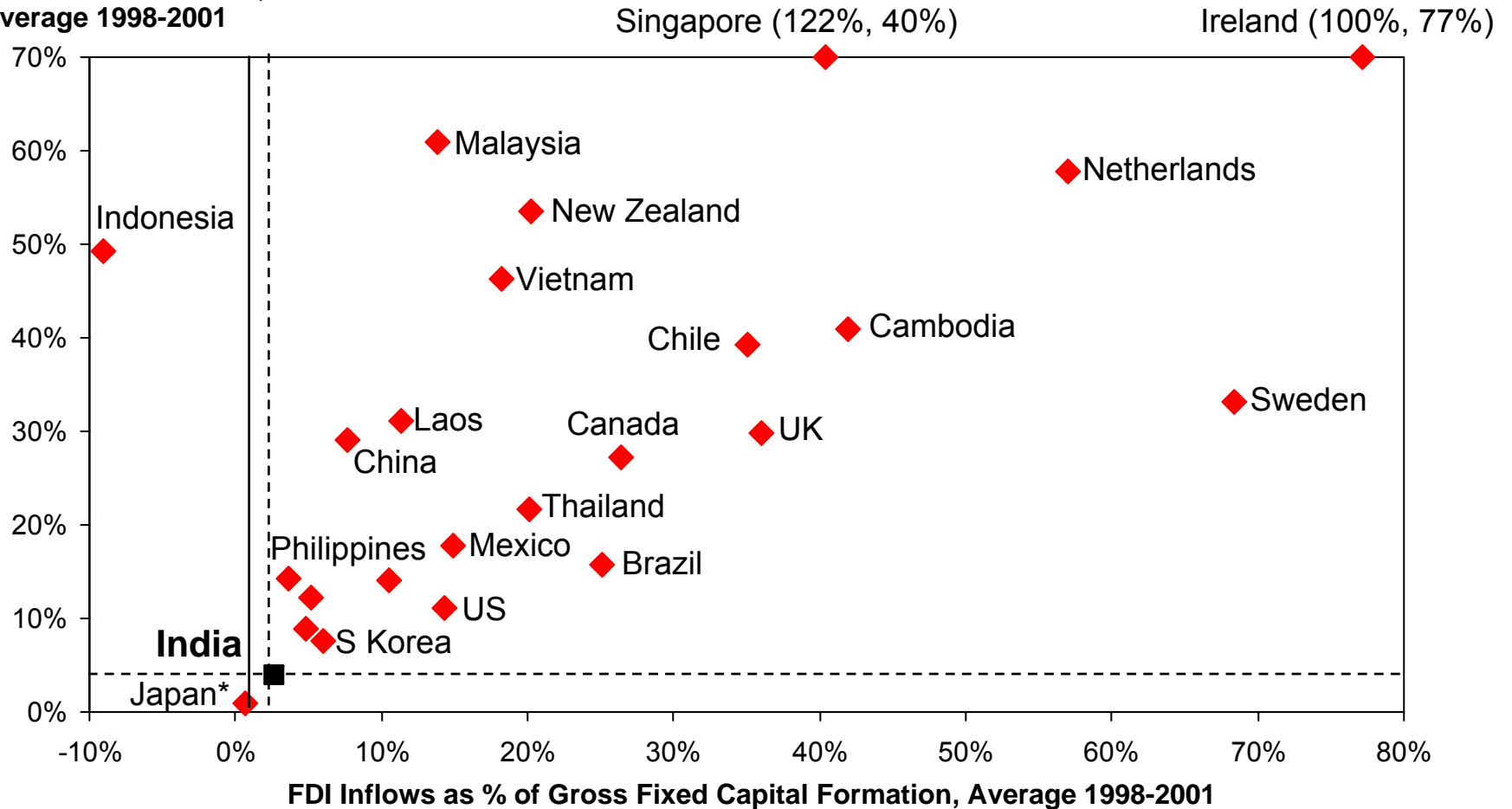
Average Annual Growth Rate (Estimation Interval)



Note: Estimation interval reflects different assumptions about labor share in production
Source: IMF (2003), (2002)

Comparative Inward Foreign Investment Selected Economies

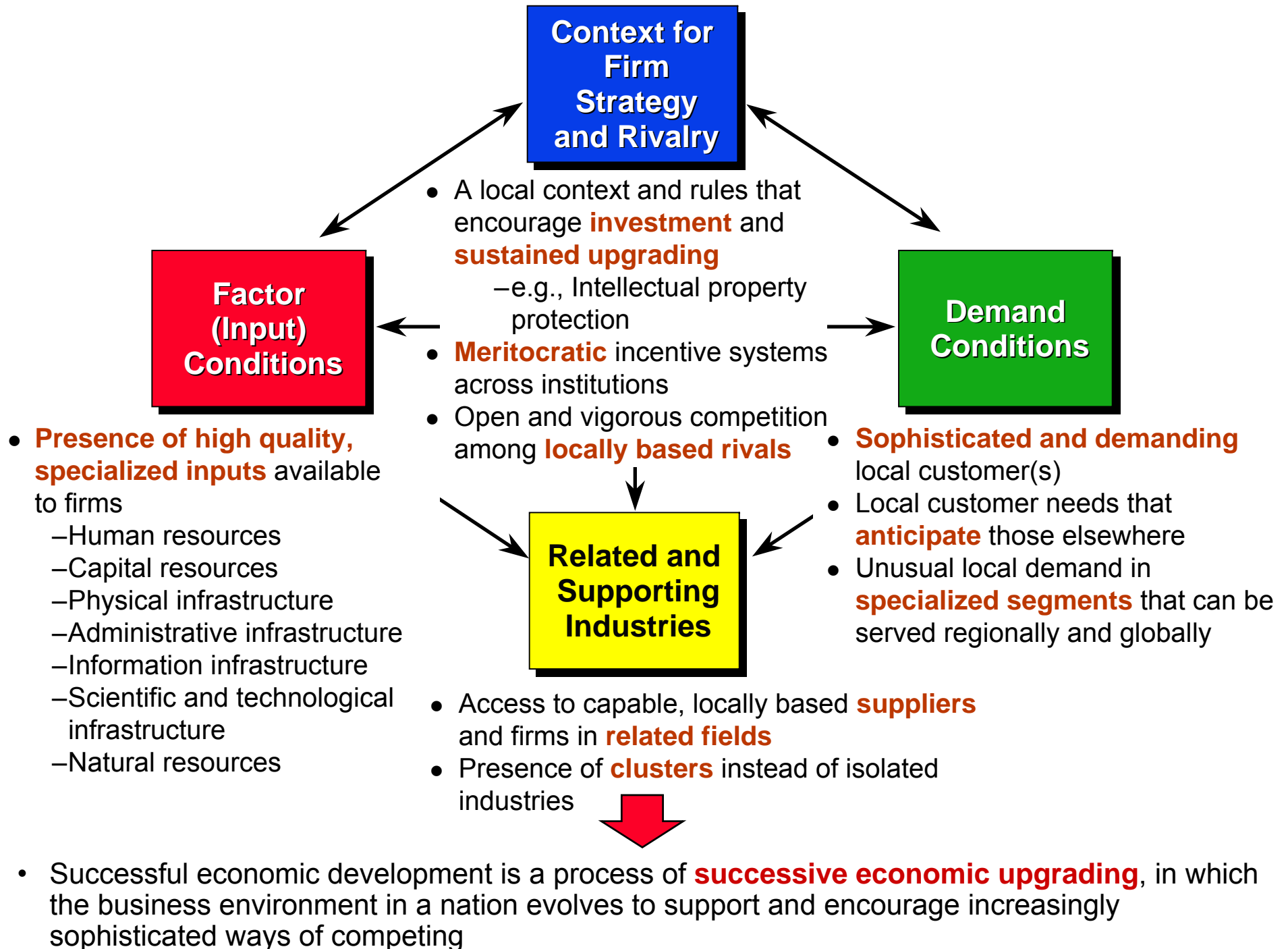
FDI Stocks as % of GDP,
Average 1998-2001



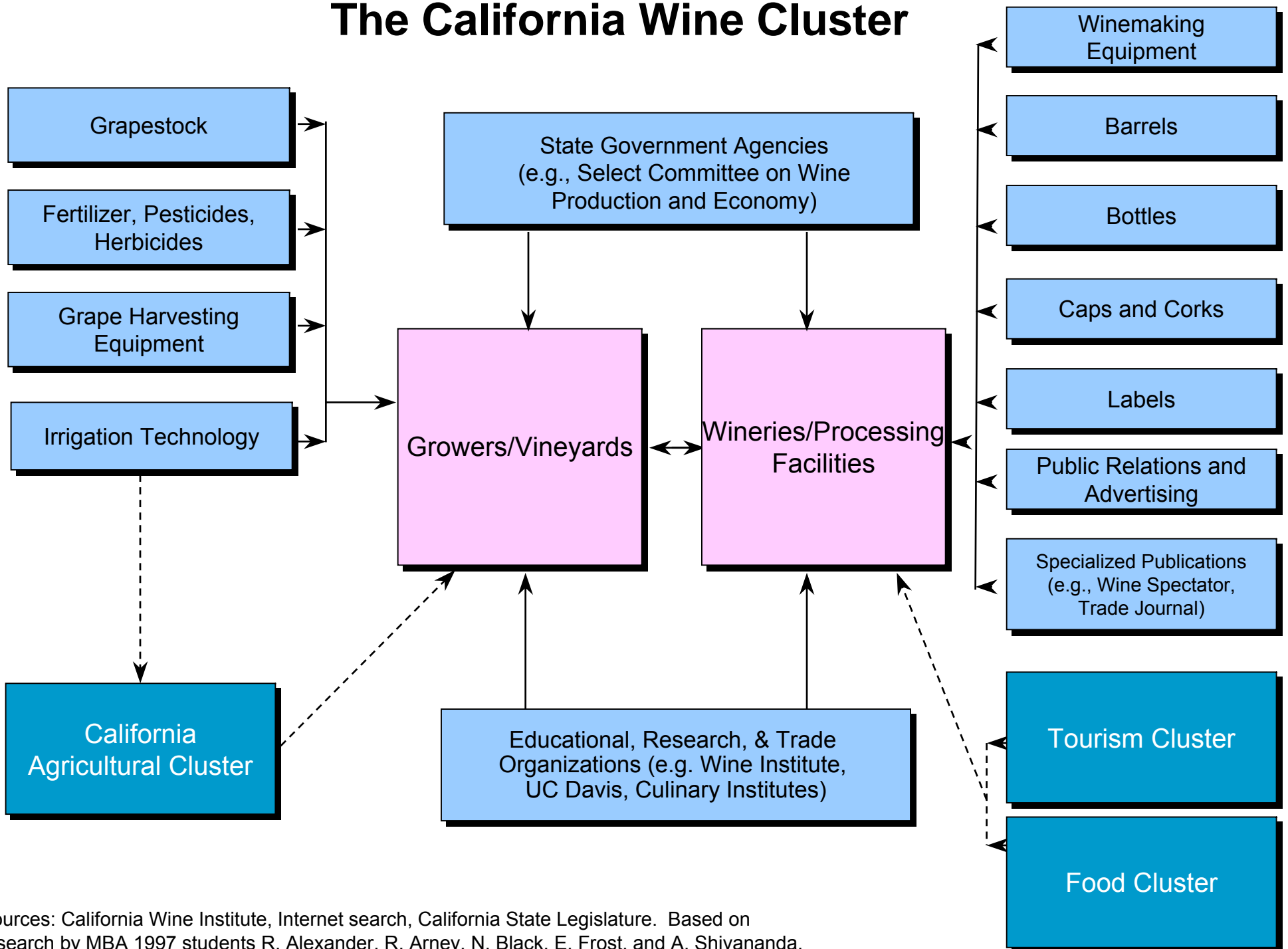
Note: Some researchers argue that Japanese statistics understate FDI inflows and stocks by a factor of three (Weinstein, 1997)

Source: World Investment Report 2002

Productivity and the Business Environment



The California Wine Cluster



Sources: California Wine Institute, Internet search, California State Legislature. Based on research by MBA 1997 students R. Alexander, R. Arney, N. Black, E. Frost, and A. Shivananda.

Leading Footwear Clusters

Portugal

- Production
- Focus on short-production runs in the medium price range

Romania

- Production subsidiaries of Italian companies
- Focus on lower to medium price range

Italy

- Design, marketing, and production of premium shoes
- Export widely to the world market

United States

- Design and marketing
- Focus on specific market segments like sport and recreational shoes and boots
- Manufacturing only in selected lines such as hand-sewn casual shoes and boots

China

- OEM Production
- Focus on low cost segment mainly for the US market

Vietnam/Indonesia

- OEM Production
- Focus on the low cost segment mainly for the European market

Institutions for Collaboration

Selected Massachusetts Organizations, Life Sciences

Life Sciences Industry Associations

- Massachusetts Biotechnology Council
- Massachusetts Medical Device Industry Council
- Massachusetts Hospital Association

General Industry Associations

- Associated Industries of Massachusetts
- Greater Boston Chamber of Commerce
- High Tech Council of Massachusetts

Economic Development Initiatives

- Massachusetts Technology Collaborative
- Mass Biomedical Initiatives
- Mass Development
- Massachusetts Alliance for Economic Development

University Initiatives

- Harvard Biomedical Community
- MIT Enterprise Forum
- Biotech Club at Harvard Medical School
- Technology Transfer offices

Informal networks

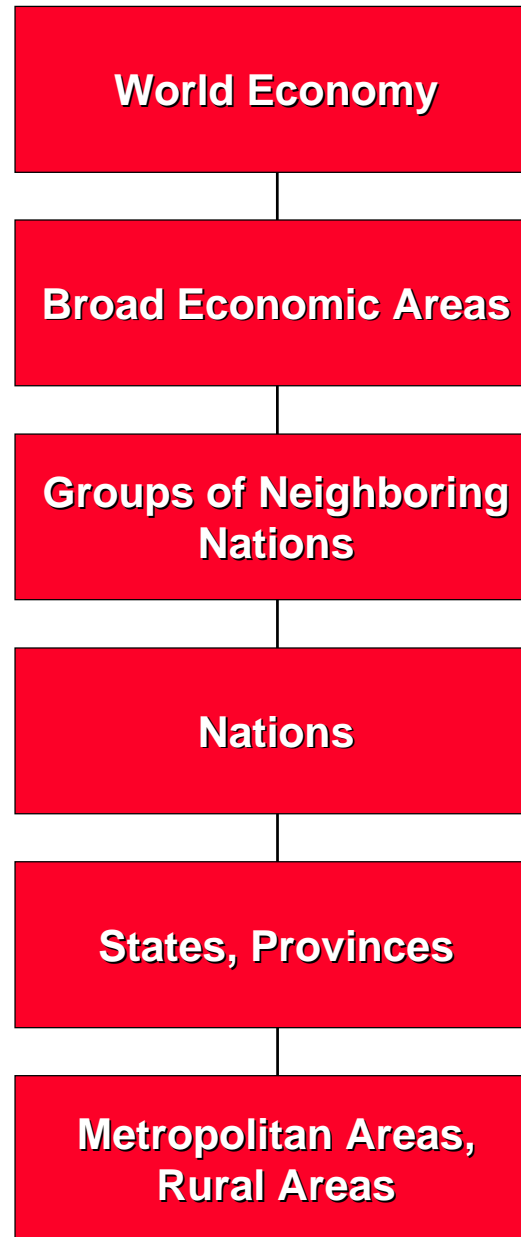
- Company alumni groups
- Venture capital community
- University alumni groups

Joint Research Initiatives

- New England Healthcare Institute
- Whitehead Institute For Biomedical Research
- Center for Integration of Medicine and Innovative Technology (CIMIT)

Influences on Competitiveness

Multiple Geographic Levels



Shifting Responsibilities for Economic Development

Old Model

- **Government** drives economic development through policy decisions and incentives



New Model

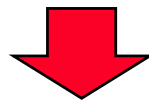
- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration

Competitiveness Agenda for India

- **Macroeconomic and Social Context**
 - **The need for public sector reform**
 - **Integration of social and economic policy**
 - **Enhancing agricultural competitiveness**
- **Microeconomic Business Environment**
 - Barriers to competition
 - Weaknesses in physical infrastructure
 - Financial markets
 - Limited cluster development
 - Enhancing India's innovative capacity
- **Economic Policy-Making Process**
 - Shifting roles in economic development
 - Economic strategies at the state level
 - Roles in economic development

Public Sector Reform

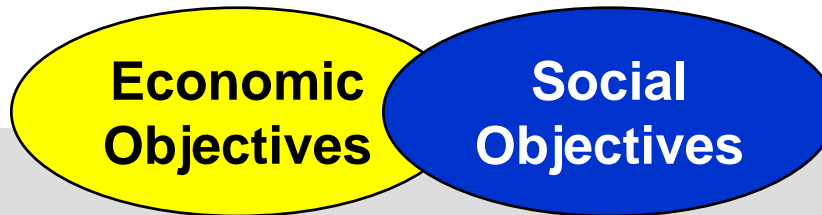
- The Indian public sector accounts for an important part of the country's modern economy
 - 12m employees of 27m total in the modern economy are public sector employees
 - Public sector activities have often been used as an instrument of social policy
- Deteriorating public sector balances threaten macroeconomic stability
 - Current attempts to control public deficits by curbing public investment will have detrimental effects on growth



- More efficient public sector services are essential to increase Indian prosperity and allow rising competitiveness of Indian companies
- Spending public resources more effectively is the first priority, rather than focusing primarily on new revenues

Integrating Economic and Social Policy

- In the new thinking on competition, there is **not an inherent conflict** between economic and social objectives, but a long term synergy



- The **competitiveness of companies** depends heavily on
 - Rising skill levels
 - Safe working conditions
 - A sense of equal opportunity
 - Low levels of pollution (pollution is a sign of unproductive use of physical resources)
- However, efforts to meet “social” objectives must be **aligned with productivity** and prepare and motivate individuals to **succeed in the market system**
- India has fallen into the trap of distorting markets to meet social objectives, which harms competitiveness
 - E.g., price subsidies; quotas; reserved industries
- Instead, India must address root causes

Agricultural Reform

- Improving the productivity of agriculture is necessary to make significant headway in improving Indian prosperity
 - Two thirds of Indians are engaged in (mostly subsistence) agriculture
- Making agriculture more efficient will raise purchasing power and, over time, allow large scale movement of workers into other parts of the economy
 - Higher prosperity on average will move larger numbers of Indians into the market for Indian products and services
 - Sustainable economic success is for companies hard to achieve, if their location is not succeeding as well

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Barriers to Competition

- Barriers to foreign competition
 - India's tariff levels have come down substantially to a 35% average, but are still **significantly higher** than in peer countries
 - Non-tariff barriers have become **more important**; India is now the second most proliferate user of **anti-dumping measures**
 - Barriers to **foreign direct investment** (FDI) remain substantial and have significantly limited inflows of capital and know how
- Barriers to domestic competition
 - The level of bureaucratic red tape, corruption, and regulatory distortions **remains high** despite recent improvements
 - **Government ownership** of companies remains widespread, and privatization is moving at glacial speed
 - **Corporate boards** provide only limited governance

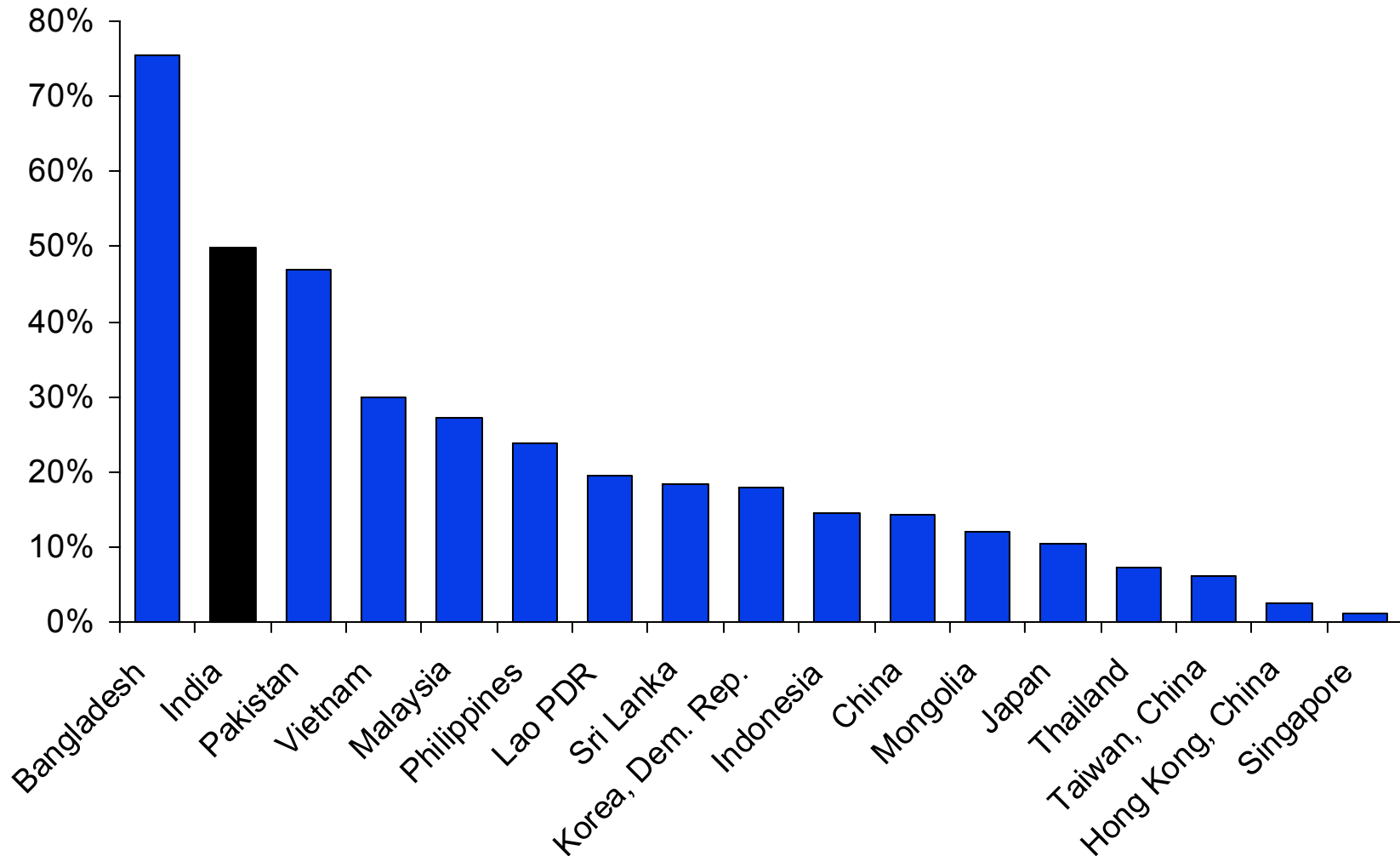


- Reforms in India need to become far deeper and more **widespread** to keep pace with reforms in other countries

Costs of Business Formation

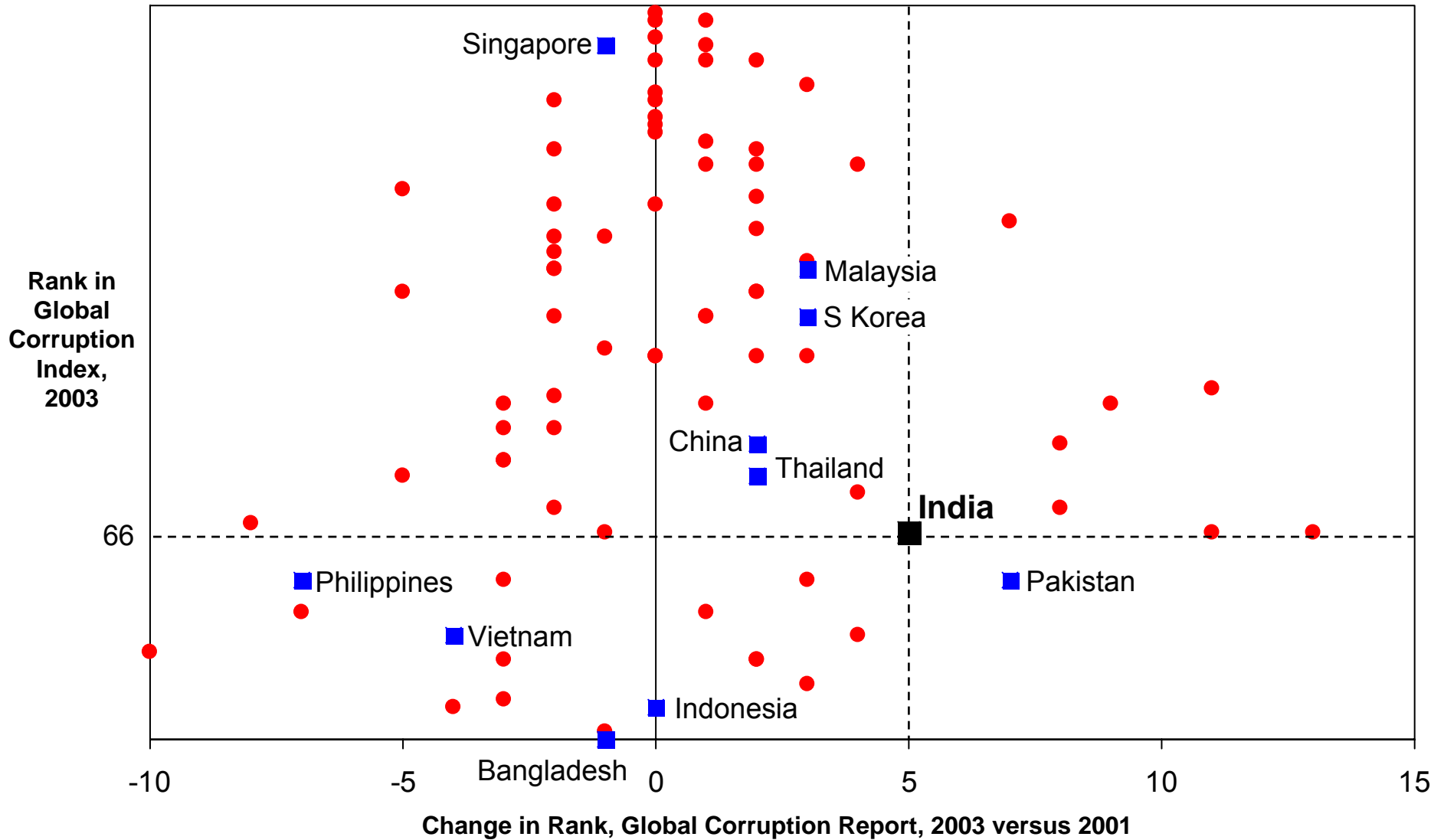
Asian Countries

Cost of Business Formation
relative to GDP per capita



Corruption

Transparency International Global Corruption Report

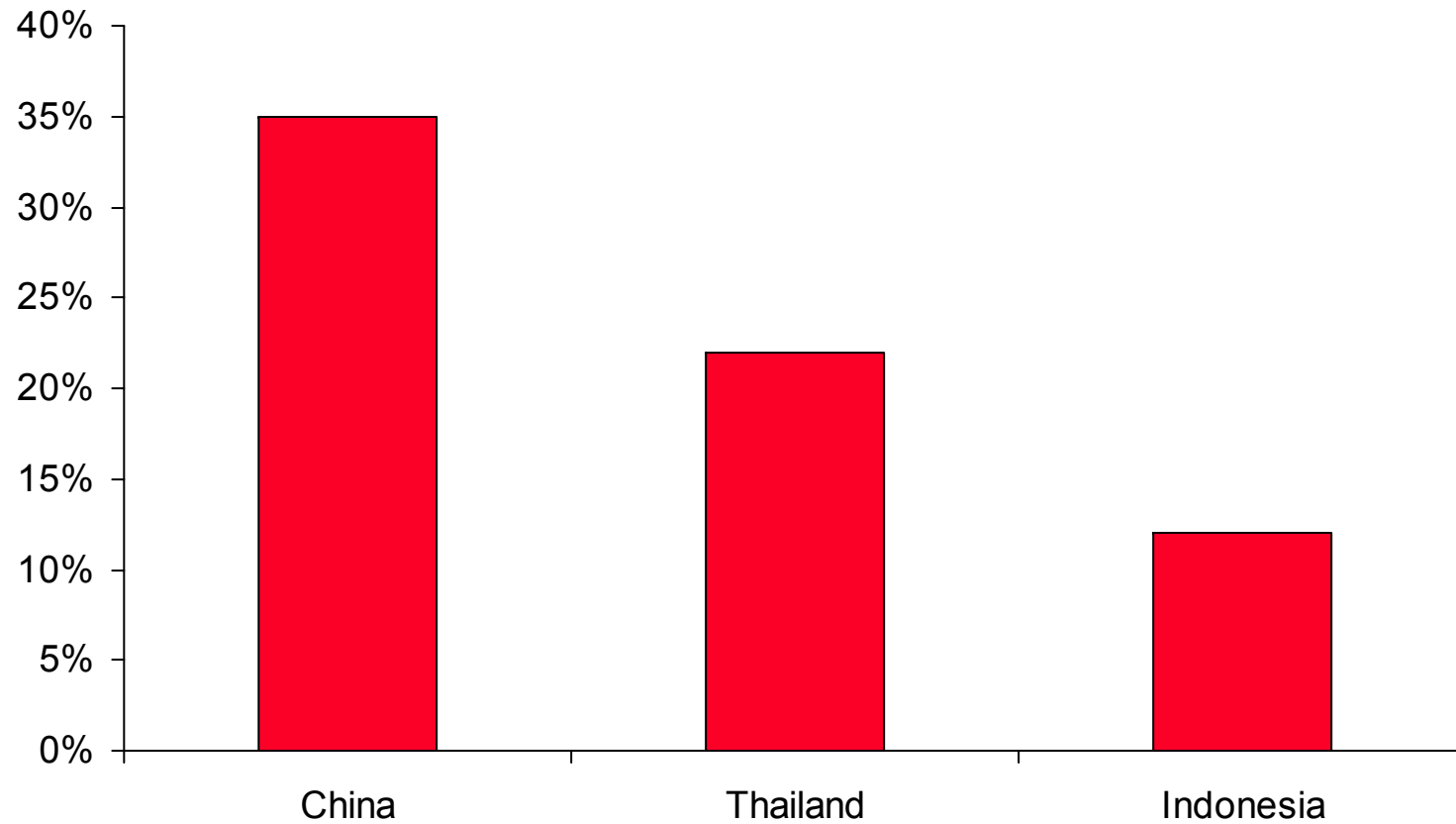


Note: Asian countries in blue, constant country sample
 Source: Global Corruption Report, 2003

Transportation Cost Position

Selected Asian Competitors

**Size of India's
Transportation Cost Disadvantage
for Textiles shipped to the US**



Other Physical Infrastructure

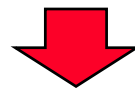
- India's weaknesses in physical infrastructure are as much the result of **distortive regulations** as of low investment
 - **Power supply** is scarce and unreliable, with rate regulation reducing the incentives to invest in better plants
 - **Railroad infrastructure** is deteriorating, and price distortions to subsidize personal travel work against the efficiency of the railroad network for goods transportation



- Improvements in the regulatory environment would have a significant impact on **removing bottlenecks** in the physical infrastructure

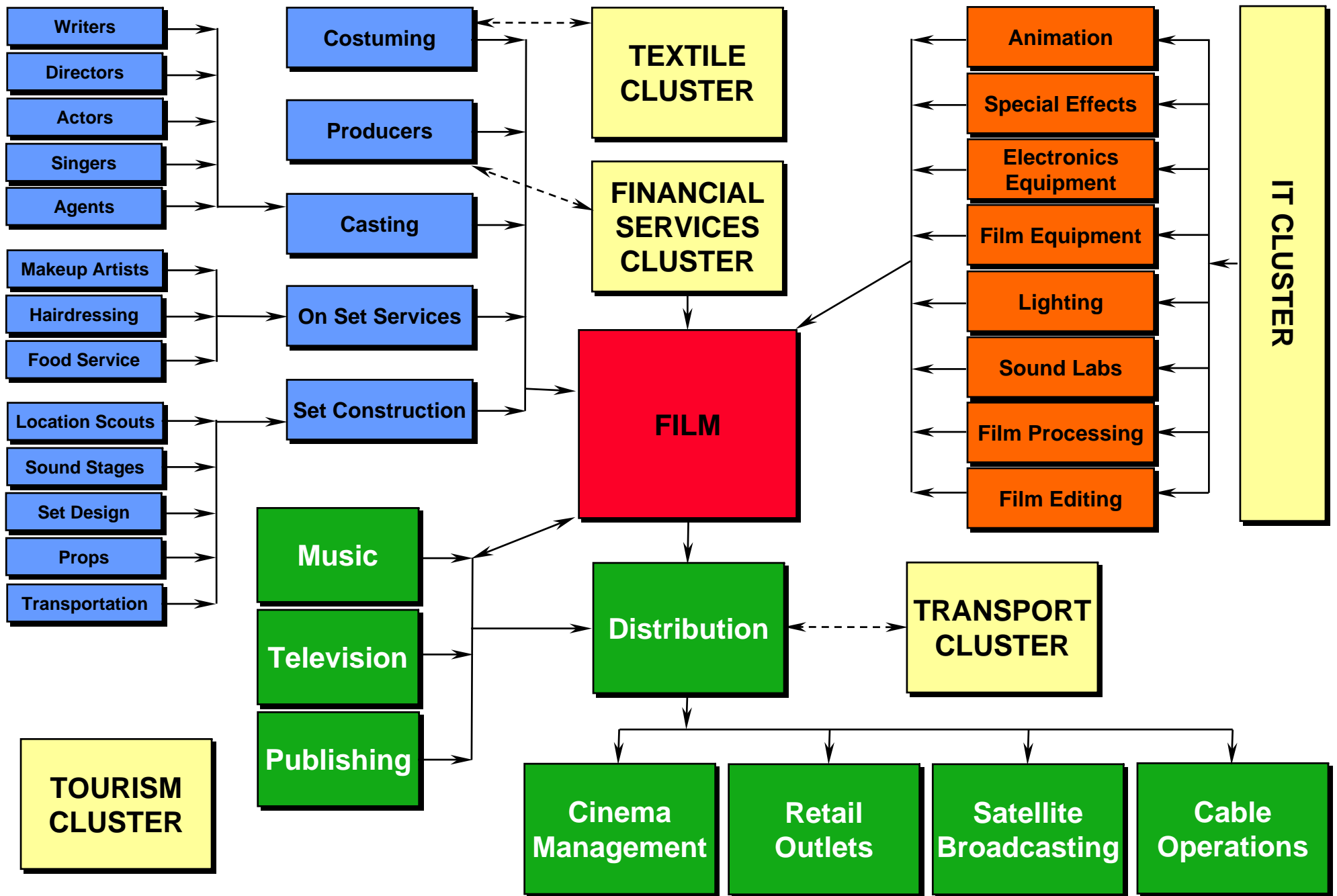
Financial Markets

- India's financial markets have **improved** over the last five years
- However, barriers to efficient, market-driven capital allocation remain
 - The majority of financial institutions remains under **government control**, with weak incentives for efficient credit decisions
 - Targets for credit allocation **distort** the flow of capital
 - There is no efficient mechanisms for **bankruptcy** and recovering **non-performing loans**
 - The **spread** between interest rates for loans and deposits remains high
- The rising **government deficits** crowd out private investments

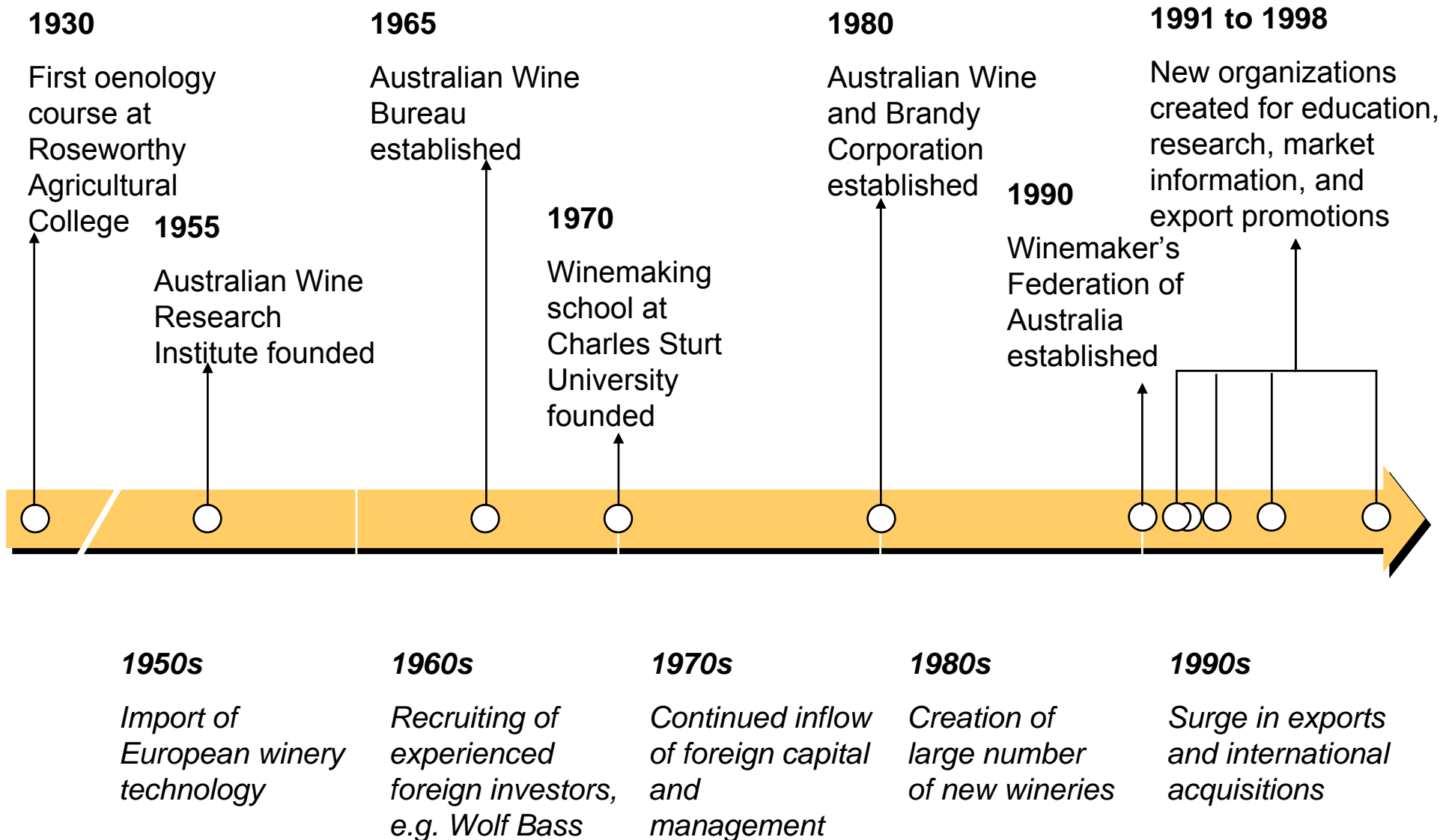


- Levels of private investment in India remain **below** the levels in peer countries
- Private companies are reported to be **credit-constrained**
- **Conglomerate business groups** remain a necessary institutional response to financial market weaknesses

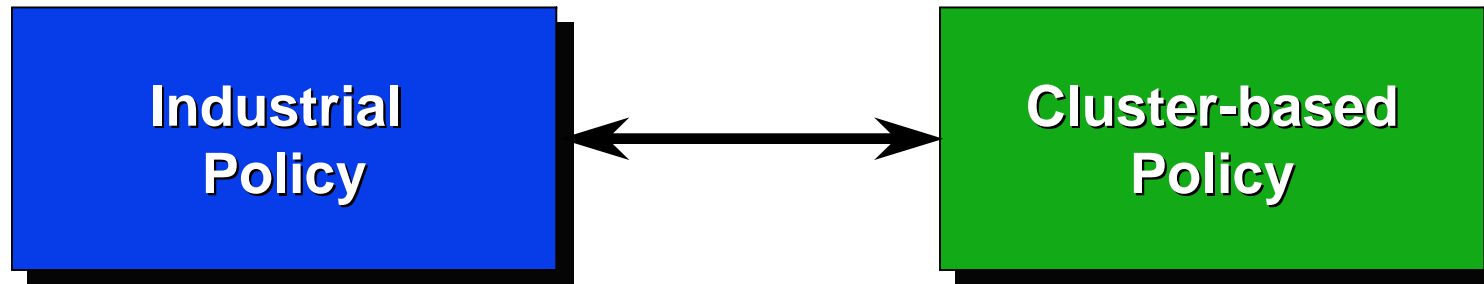
Indian Movie Cluster (“Bollywood”)



The Australian Wine Cluster History



Cluster Policy versus Industrial Policy



- Target desirable industries / sectors
- Focus on domestic companies
- Intervene in competition (e.g., protection, industry promotion, subsidies)
- Centralizes decisions at the national level



Distort competition

- **All** clusters can contribute to prosperity
- Domestic and foreign companies both enhance productivity
- Relax impediments and constraints to productivity
- Emphasize cross-industry linkages / complementarities
- Encourage initiative at the state and local level



Enhance competition

Innovation in India

U.S. Patenting by Indian Organizations

	Organization	Patents Issued from 1997 to 2001
1	COUNCIL OF SCIENTIFIC AND IND. RESEARCH	172
2	TEXAS INSTRUMENTS, INCORPORATED	28
3	RANBAXY LABORATORIES LIMITED	23
4	DR. REDDY'S RESEARCH FOUNDATION	20
5	GENERAL ELECTRIC COMPANY	17
6	INDIAN OIL CORPORATION, LTD.	12
7	PANACEA BIOTEC LIMITED	11
8	LUPIN LABORATORIES LIMITED	9
8	DABUR RESEARCH FOUNDATION	9
8	NATIONAL INSTITUTE OF IMMUNOLOGY	9
11	INTERNATIONAL BUSINESS MACHINES CORP.	8
12	INDIAN PETROCHEMICALS CORPORATION LIMITED	7
13	HOECHST AKTIENGESELLSCHAFT	6
13	GEM ENERGY INDUSTRY LIMITED	6
15	NATREON INC.	5
15	IOWA INDIA INVESTMENTS COMPANY LIMITED	5
17	UNILEVER HOME & PERSONAL CARE USA	4
17	TORRENT PHARMACEUTICALS LTD.	4
17	NATIONAL RESEARCH DEVELOPMENT CORP.	4
17	DEP. OF SCIENCE AND TECHNOLOGY, GOV. OF INDIA	4

Note: Shading indicates universities, research institutions, and other government agencies

Source: US Patent and Trademark Office (www.uspto.gov). Author's analysis.

Patents by Organization

Commonwealth of Massachusetts

	Organization	Patents Issued from 1997 to 2001
1	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	518
2	GENERAL HOSPITAL CORPORATION	296
3	EMC CORPORATION	269
4	DIGITAL EQUIPMENT CORPORATION	261
5	POLAROID CORPORATION	213
6	ANALOG DEVICES, INC.	167
7	MILLENNIUM PHARMACEUTICALS, INC.	165
8	HARVARD UNIVERSITY	150
9	COMPAQ COMPUTER CORPORATION, INC.	147
10	SUN MICROSYSTEMS, INC.	143
11	BOSTON SCIENTIFIC CORPORATION	135
12	ACUSHNET COMPANY	130
13	GENETICS INSTITUTE, INC.	127
14	GILLETTE COMPANY	112
15	BRIGHAM AND WOMEN'S HOSPITAL	107
16	RAYTHEON COMPANY	101
17	GENERAL ELECTRIC COMPANY	99
18	HEWLETT-PACKARD COMPANY	96
19	CHILDREN'S MEDICAL CENTER CORPORATION	93
20	QUANTUM CORP. (CA)	93
21	COGNEX CORPORATION	90
22	DANA-FARBER CANCER INSTITUTE	90
23	JOHNSON & JOHNSON PROFESSIONAL INC.	90
24	BOSTON UNIVERSITY	84
25	SEPRACOR INC.	84

Note: Shading indicates universities, research institutions, and other government agencies

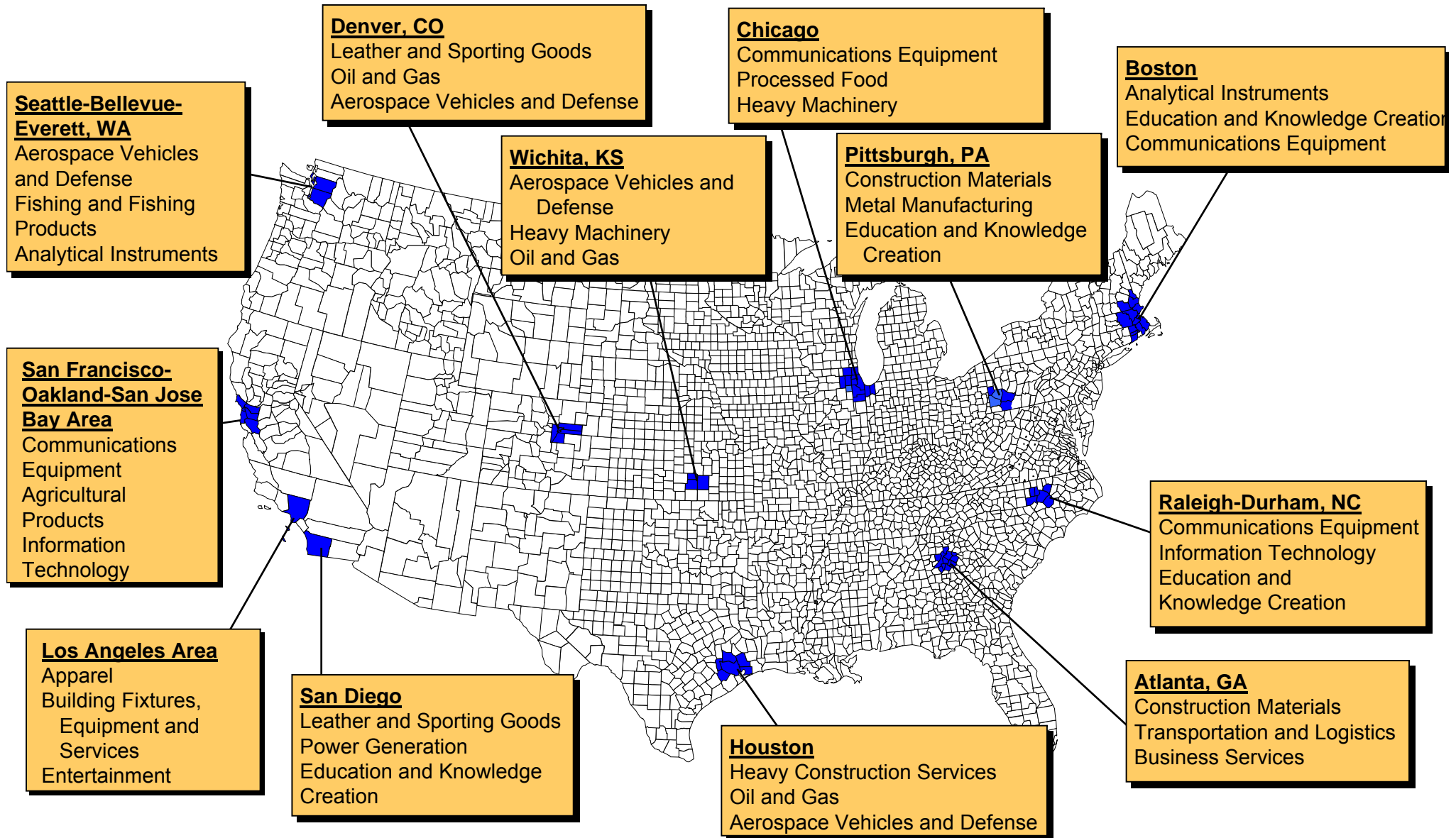
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- **Economic Policy-Making Process**
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Specialization of Regional Economies

Select U.S. Geographic Areas

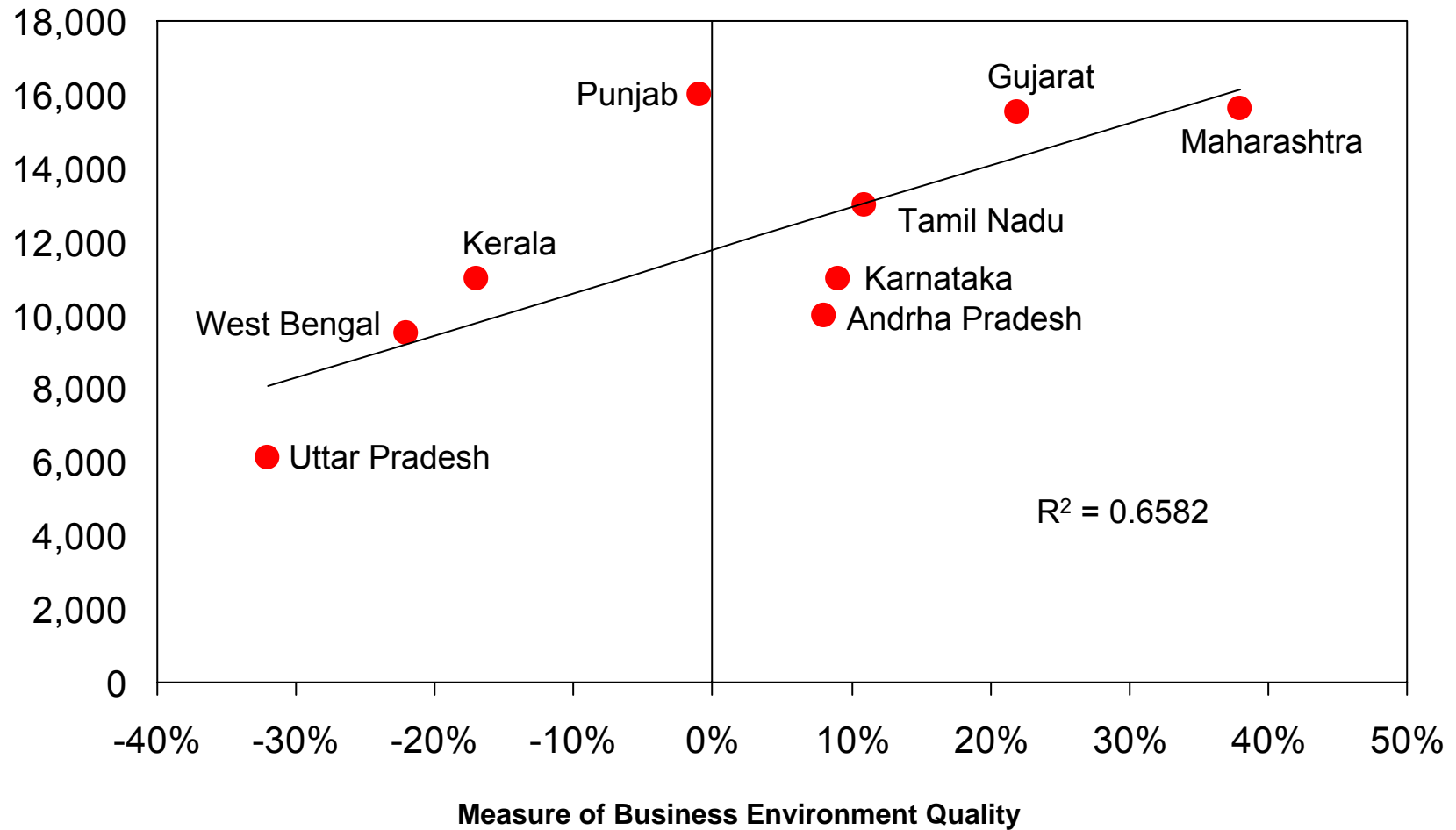


Note: Clusters listed are the three highest ranking clusters in terms of share of national employment

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

Regional Business Environment and Prosperity India

Per Capita SDP, 1998/99



Source: World Bank/CII (2002)

Regional Economic Strategies in India

- India has **devolved** important economic policy responsibilities to the state level
- However,
 - McKinsey reports that **40% of all regulations** and government interventions holding back productivity growth are controlled at the state level
 - The recent deterioration of **public sector fiscal balances** was largely driven by a few states
 - The last **change of the public financing system** has further deteriorated the incentives for states to run sustainable budgets

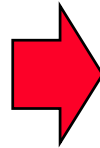


- India needs to create a policy environment where states have greater **capacity** and **incentives** to take charge of their own economic competitiveness

Shifting Responsibilities for Economic Development

Old Model

- **Government** drives economic development through policy decisions and incentives



New Model

- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration

Role of the Private Sector in Economic Development

- A company's competitive advantage is partly the result of the **local environment**
- Company membership in a cluster offers **collective benefits**
- Private investment in **“public goods”** is justified



- Take an **active role** in upgrading the local infrastructure
- Nurture **local suppliers** and attract new supplier investments
- Work closely with local **educational and research institutions** to upgrade **quality and create specialized programs addressing cluster needs**
- Provide government with **information** and **substantive input** on regulatory issues and constraints bearing on cluster development
- Focus **corporate philanthropy** on enhancing the local business environment



- An important role for **trade associations**
 - Greater influence
 - Cost sharing

India's Potential in 2004

- The current and announced reforms in India have the potential to move the country far beyond of what has been achieved in the last decade
- To achieve success, the reforms need to be **widespread** and **sustained**
 - Everything matters for Competitiveness
 - Competitiveness is a marathon, not a sprint
- Progress on competitiveness will also require a **new model of joint private-public efforts** rather than a government-driven model



- India has the **best opportunity** to improve its economic competitiveness in decades; the country can't afford to squander this opportunity

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