India’s Competitiveness:
A Perspective from States

Presented By:
Amit Kapoor
Chair, Institute for Competitiveness
WHAT IS COMPETITIVENESS?

• Competitiveness is the **productivity** (value per unit of input) with which a nation, region, or cluster utilizes its human, capital, and natural resources. Productivity sets a nation’s or region’s standard of living (wages, returns on capital, returns on natural resources)
  • 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 or region competes in that matters for prosperity, but **how** firms compete in those industries
  • Productivity in a nation or region is a reflection of what both domestic and foreign firms **choose to do in that location**. The location of ownership is secondary for prosperity.
  • The productivity of **“local”** industries is of fundamental importance to competitiveness, not just that of traded industries
  • Devaluation and revaluation do **not** make a country more or less “competitive”

• Nations and regions compete in offering the **most productive environment** for business

Source: Michael E. Porter and Institute for Strategy and Competitiveness
WHAT DETERMINES COMPETITIVENESS?

MICROECONOMIC COMPETITIVENESS
- Quality of business environment
- State of cluster development
- Sophistication of company operations and strategy

MACROECONOMIC COMPETITIVENESS
- Sound monetary and fiscal policy
- Human Development and effective public institutions

ENDOWMENTS

Source: Michael E. Porter and Institute for Strategy and Competitiveness
WHY INNOVATE?

The capability to innovate and to bring innovation successfully to market is a crucial determinant of the global competitiveness of nations.

- Inherited Prosperity (Natural Resources)
  - Land
  - Labour
  - Capital

- Created Prosperity

- Government
  - Firms create value adding goods and services by realizing the potential of natural resources
  - To create conducive conditions to enable innovation
COUNTRY-WISE GROWTH IN PATENTS

Total Number of Patents granted in 2015 vs. CAGR Growth Rate of Patents granted from 2002-2015

**LINK BETWEEN PATENTS AND COMPETITIVENESS**

![Graph showing the link between patents and competitiveness](image)

**Equation:**

\[ y = 118.32x - 6267.6 \]

**R²:** 0.5581

**Source:** Annual Reports of CGPDTM Various Rounds
Link between Innovation and Competitiveness at Global Level

Global Competitiveness Index 2016-17

Global Innovation Index Score 2017

COUNTRY - WISE GROWTH IN PATENTS

y = 0.0495x + 2.4882
R² = 0.8064
Factors of Production
- Land
- Labor
- Capital
- Infrastructure (Physical and Technological)
- Human Capital

Demand Conditions
- Market Size
- Market Sophistication
- Market Growth

Social and Political Institutions
- Healthcare Institutions
- Educational Institutions
- Administrative Institutions
- Financial Institutions

Industries, Innovation and Entrepreneurship
- R&D
- New Firm Creation
- Firms
- Industrial Clusters
- New Knowledge Creation (Patents, Copyrights etc.)
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Maharashtra and Jharkhand are the most and least innovative states in the country
Innovation seems to be seriously lacking in the resource-rich eastern states
A maximum score of 43 indicates the potential for Indian states to climb up the innovation ladder
STAGES OF DEVELOPMENT

Factors of Production

Social and Political Institutions

Demand Conditions

Industries, Innovation and Entrepreneurship

Bihar
Karnataka
Tamil Nadu
Goa, Delhi and Telangana are the leading states under this pillar. Indicative of low infringement on land rights, high labour force participation and high credit availability. As expected of a developing nation, factors of production is the most developed aspect of Porter’s Diamond having the lowest standard deviation of the four pillars (6.5 as compared to 16 for the other three).
DEMAND CONDITIONS

- Maharashtra, Delhi and Tamil Nadu are the leading states under this pillar
- A combination of market size and market sophistication define the demand conditions of a region
- Therefore, states with higher purchasing power tend to perform well
Tamil Nadu, Maharashtra and Uttar Pradesh are the leading states under this pillar. These states being India’s leading manufacturing centres have expectedly done well in innovation and entrepreneurship. The eastern part of India has been a poor performer in this aspect.
The map is reflective of India’s poor institutional standards. Healthcare, educational, financial and administrative institutions have been considered to measure the country’s institutional performance. Eastern and northern-most states have scored the highest. However, that is the case because troubled regions usually have a higher incidence of institutional support.
$y = 1.021x + 5.6586$
$R^2 = 0.6564$
COUNTRY WISE GROWTH IN PATENTS

LINK BETWEEN INNOVATION AND SOCIAL PROGRESS: STATES OF INDIA

\[ y = 0.4771x + 43.326 \]

\[ R^2 = 0.3833 \]

Social Progress Index

State Innovation Index

Andhra Pradesh
Assam
Bihar
Chhattisgarh
Delhi
Goa
Gujarat
Haryana
Himachal Pradesh
Himachal Pradesh
Jammu & Kashmir
Jharkhand
Karnataka
Kerala
Maharashtra
Manipur
Meghalaya
Nagaland
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Uttar Pradesh
Uttarakhand
West Bengal

y = 0.4771x + 43.326
R² = 0.3833
LINK BETWEEN INNOVATION AND ACCESS TO INFORMATION & COMMUNICATION: STATES OF INDIA
Higher innovative capabilities provide a region with a considerable competitive advantage over other regions. Patenting is the best available measure for quantifying this aspect. It seems to be the case that larger states by employment size show higher innovative tendencies.
Employment growth does not show a relationship with the presence of high-tech clusters

\[
y = -328.64x + 29522 \\
R^2 = 0.0015
\]
Competitiveness in high-income countries is mainly driven by innovation.

Data: Michael E. Porter and Institute for Strategy and Competitiveness
Government can support innovation in two ways:

**Directly** - by investing in development of technology

**Indirectly** - by creating an environment that supports research and development.
DIMENSIONS OF INNOVATION POLICY

ROLE OF GOVERNMENT

- Incentives to support innovators
- Establish institutions to facilitate research and development
- Provide environment that supports innovation by removing obstacles faced by companies
- Invest in the creation of knowledge workers
DIMENSIONS OF INNOVATION POLICY

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- Invest in the creation of knowledge workers
Business Incentives

Data: Global Innovation Index
DIMENSIONS OF INNOVATION POLICY

ROLE OF GOVERNMENT

- Incentives to support innovators
- Establish institutions to facilitate research and development
- Provide environment that supports innovation by removing obstacles faced by companies
- Invest in the creation of knowledge workers
Research & Development Expenditure in Mature Economies

Country / Year

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Sum of Research & Development Expenditure (as a percentage of GDP) for each Year broken down by Country. Color shows details about Year.

Data: World Bank
The trend of sum of Research & Development Expenditure (as a percentage of GDP) for Year. Color shows details about Country. The marks are labeled by sum of Research & Development Expenditure (as a percentage of GDP).

Data: World Bank
Incentives to support innovators
Establish institutions to facilitate research and development
Provide environment that supports innovation by removing obstacles faced by companies
Invest in the creation of knowledge workers
Incentives to support innovators

Establish institutions to facilitate research and development

Provide environment that supports innovation by removing obstacles faced by companies

Invest in the creation of knowledge workers
WHAT IF A COUNTRY LACKS A ROBUST IP REGIME

Source: Michael E. Porter and Institute for Competitiveness Analysis

Local rules and incentives that encourage productivity and investment are decreased:
- Lower salaries due to low end work.
- Lower capital investments as companies want adequate standards.
- Lesser incentive to innovate as knowledge is not adequately protected.
- Competition between companies becomes more distorted as there is an absence of a level playing field.
- Companies reduce spending on R and D as they expect others to invest while they reap the benefits.
- IPR rules if they are not adequately present.
- Distort incentives to share knowledge.
- Adverse impact on innovation at the related and supporting industry level.
- It also results in a reduced network effect in clusters as different firms in clusters are adamant about sharing their business knowhow.

Distortion in access to high quality business inputs especially in:
- Information
- Scientific and Technological infrastructure.
- ‘Intellectual’ capital is not being recognised.
- In case of no protection this may result in companies’ having no incentive to innovate.

Sophisticated and demanding local customers and needs.
- Strict quality, safety, and environmental standards are not met as IPR laws are weaker.
- Greater imports as companies are not able to meet sophisticated demand.
- Government procurement of advanced technology as no laws are in place.

Context for Firms Strategy And Rivalry

Factor Conditions

Demand Conditions

Related, Supporting Industries And Institutions

Source: Michael E. Porter and Institute for Competitiveness Analysis
DOES LACK OF TRUST UNDERMINE COMPETITIVENESS?

**Context for Firms Strategy And Rivalry**
- Lower level of trust in market competition leads to collusion and illegal cartels as well as corruption.
- Low trust also results in negative perception of the regulators.
- Trust in regulators and rule of law also critical for smooth functioning.
- Independent regulators critical for institutional trust.

**Factor Conditions**
- Trust is critical in factor markets for appropriate resource allocation.
- Rent seeking reduces trust and creates an atmosphere of corruption.
- Inadequate/arbitrary policy design leads to erosion of trust.
- Risk of the market is in the form of trust that the goods and services produce will be consumed.

**Demand Conditions**
- Quality, price and differentiation are the main considerations essential for the consumer to trust the producer.
- If the consumer does not trust the producer sale may not happen.
- Effect is a slowing down economy with low level of consumption and investments.
- Safeguards in the economy include quality certifying institutions as well as branding of the product.

**Related, Supporting Industries And Institutions**
- Lower level of trust in institutions undermines the rule of law.
- Low level of trust leads to non sharing of know how resulting in lesser network externalities of agglomerations.
- Trust in institutions undermined when they harass companies.
- Vicious cycle also leads to poor quality services as nobody is willing to provide them in an over-regulated economy.
HOW CORRUPTION UNDERMINES COMPETITIVENESS?

- High level of government intervention.
- Degree of regulation a predictor of corruption.
- Collusion and Cartelization.
- Too much market power to a few companies.
- Innovation is curtailed.
- Resource allocation is skewed; providing goods and services at below market price.
- Rent seeking behaviour by bureaucracy.
- Arbitrary tract for fast track treatment.
- Disincentives for labour to perform.
- Manipulation of Policy and provision of poor quality services.
- Failure of Institutional support.
- Lower acceptance of established institutions.
- Beauraucratic rigidity.
- Weakening institutional Foundations.

Source: Institute for Competitiveness Analysis
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A Perspective from States

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Chair, Institute for Competitiveness