# India's Competitiveness: A Perspective from States

Presented By:

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#### 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

#### 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

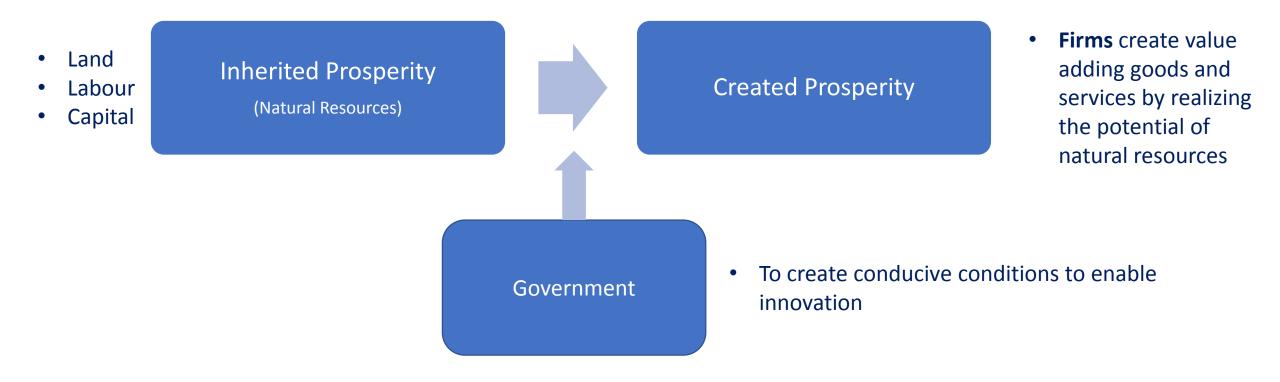
Human Development and effective public institutions

#### **ENDOWMENTS**

Source: Michael E. Porter and Institute for Strategy and Competitiveness

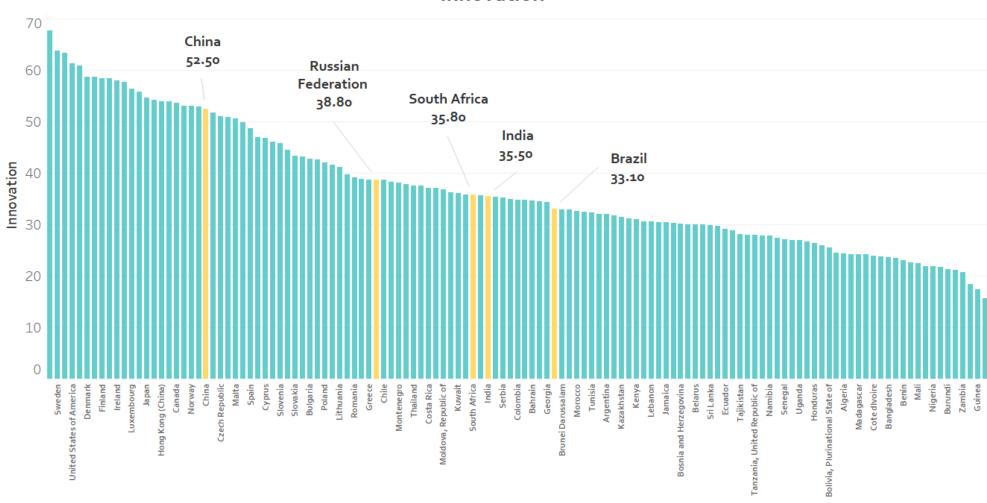
#### WHY INNOVATE?

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



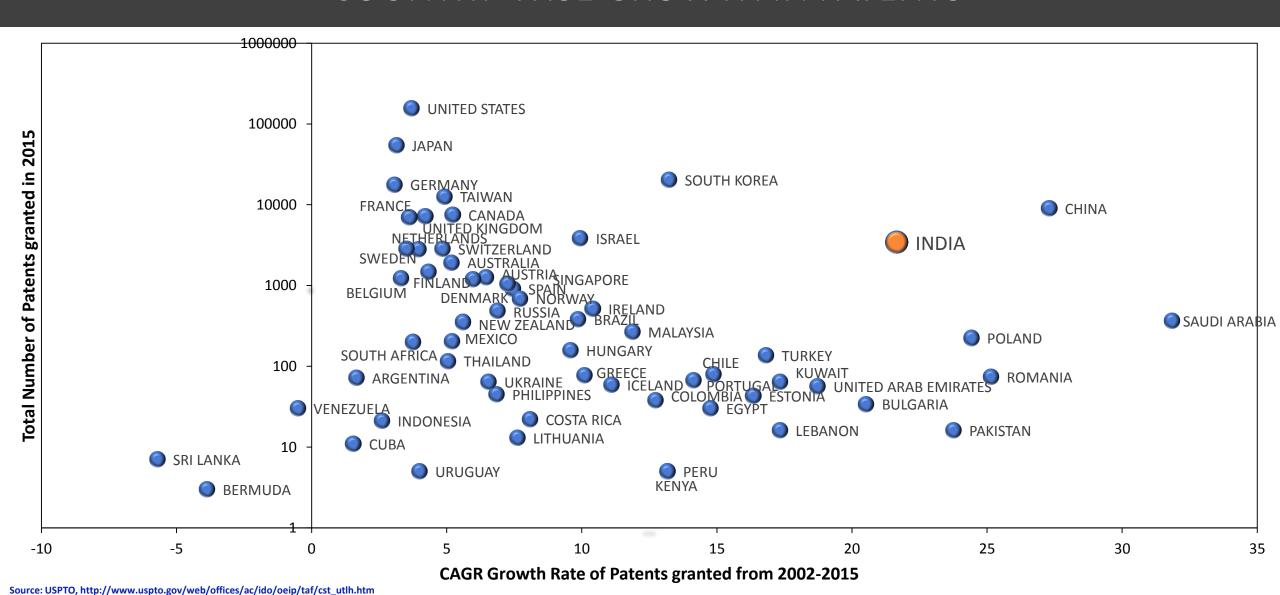
## **GLOBAL INNOVATION**



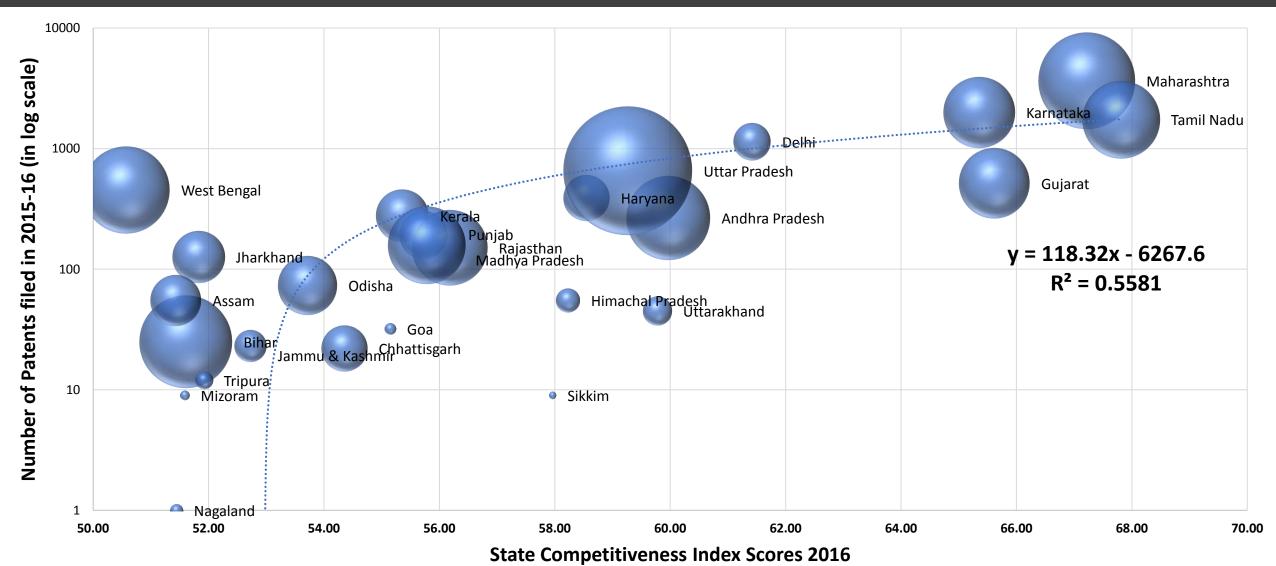


Data Source: Global Innovation Index

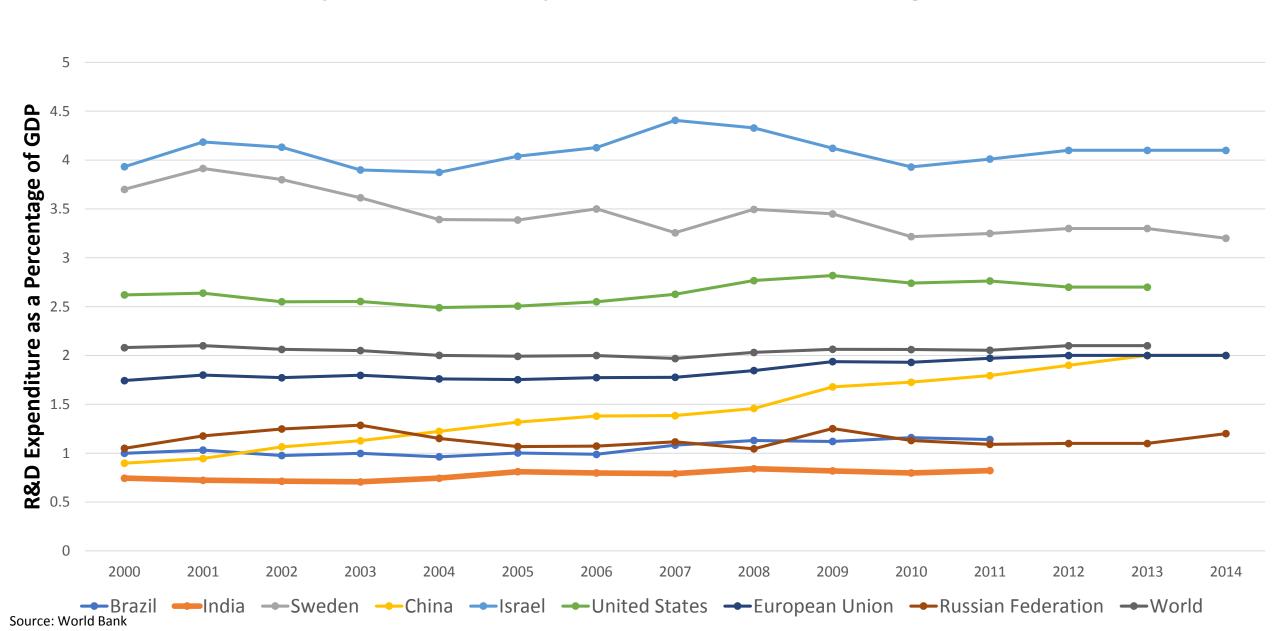
## COUNTRY-WISE GROWTH IN PATENTS



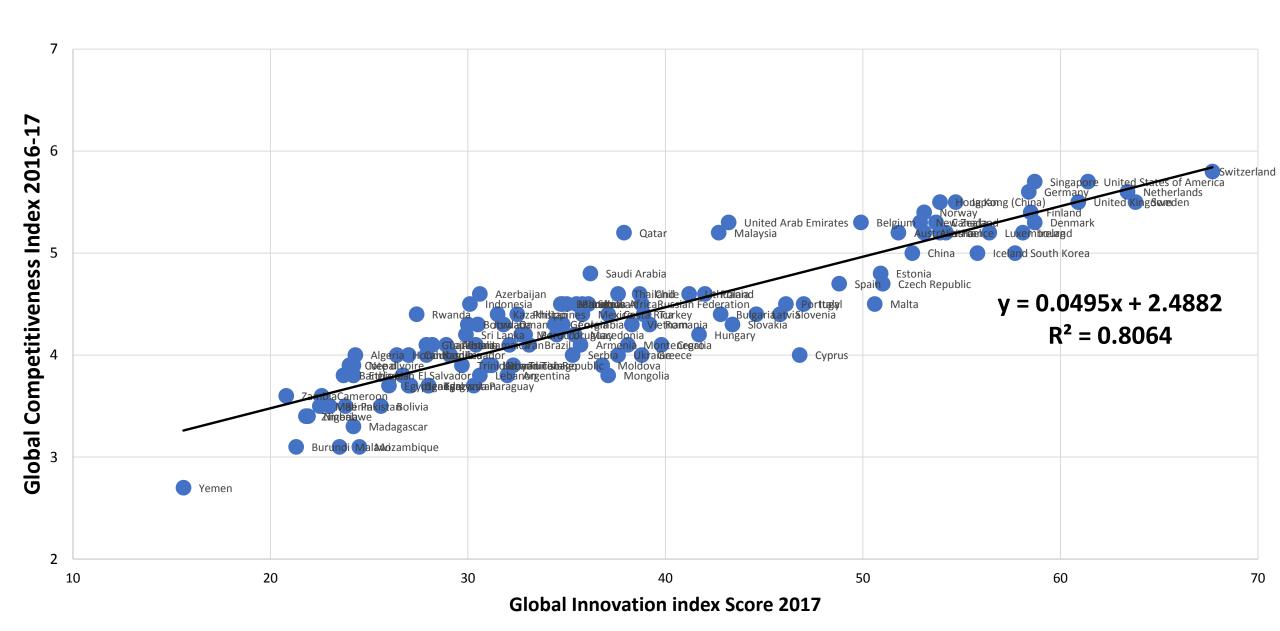
## LINK BETWEEN PATENTS AND COMPETITIVENESS



## Country-wise R&D Expenditure as a Percentage of GDP



## Link between Innovation and Competitiveness at Global Level



#### **Factors of Production**

- Land
- Labor
- Capital
- Infrastructure (Physical and Technological)
- Human Capital

#### **Demand Conditions**

- Market Size
- Market Sophistication
- Market Growth

# State Innovation

## Social and Political Institutions

- Healthcare Institutions
- Educational Institutions
- Administrative Institutions
- Financial Institutions

#### Index

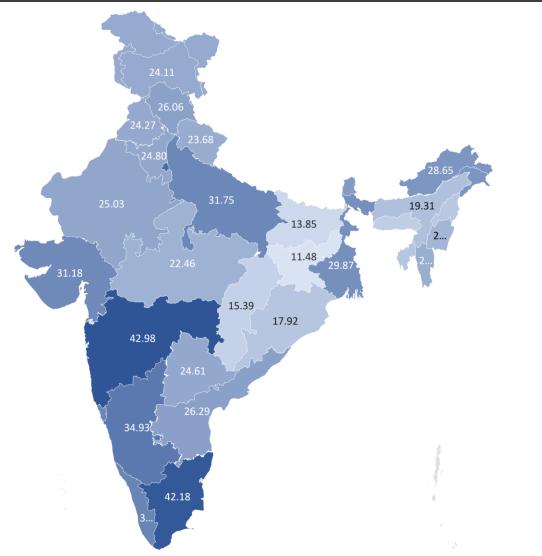
## Industries, Innovation and Entrepreneurship

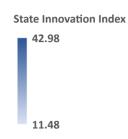
- R&D
- New Firm Creation
- Firms
- Industrial Clusters
- New Knowledge Creation (Patents, Copyrights etc.)

| State             | Per Capita SDP (₹) | State Innovation Index | Rank | Stage                      |
|-------------------|--------------------|------------------------|------|----------------------------|
| Maharashtra       | 130056             | 42.98                  | 1    |                            |
| Tamil Nadu        | 120767             | 42.18                  | 2    |                            |
| Delhi             | 235361             | 38.02                  | 3    |                            |
| Kerala            | 127187             | 32.27                  | 4    |                            |
| Goa               | 231509             | 31.94                  | 5    | Innovation-Driven States   |
| Gujarat           | 124934             | 31.18                  | 6    | Illiovation-Driven States  |
| Sikkim            | 203515             | 27.26                  | 7    |                            |
| Himachal Pradesh  | 125680             | 26.06                  | 8    |                            |
| Haryana           | 137513             | 24.80                  | 9    |                            |
| Uttarakhand       | 133047             | 23.68                  | 10   |                            |
| Karnataka         | 119711             | 34.93                  | 1    |                            |
| West Bengal       | 70059              | 29.87                  | 2    |                            |
| Arunachal Pradesh | 91061              | 28.65                  | 3    |                            |
| Andhra Pradesh    | 88082              | 26.29                  | 4    |                            |
| Rajasthan         | 70966              | 25.03                  | 5    | Investment-Driven States   |
| Telangana         | 115316             | 24.61                  | 6    | investifient-briven states |
| Punjab            | 107776             | 24.27                  | 7    |                            |
| Mizoram           | 81413              | 23.31                  | 8    |                            |
| Nagaland          | 68688              | 17.59                  | 9    |                            |
| Chhattisgarh      | 72459              | 15.39                  | 10   |                            |
| Uttar Pradesh     | 40469              | 31.75                  | 1    |                            |
| Jammu & Kashmir   | 64406              | 24.11                  | 2    |                            |
| Madhya Pradesh    | 50183              | 22.46                  | 3    |                            |
| Manipur           | 48684              | 21.37                  | 4    |                            |
| Assam             | 51016              | 19.31                  | 5    | Factor-Driven States       |
| Tripura           | 65414              | 18.15                  | 6    | Factor-Driven States       |
| Odisha            | 63122              | 17.92                  | 7    |                            |
| Meghalaya         | 66058              | 16.20                  | 8    |                            |
| Bihar             | 27675              | 13.85                  | 9    |                            |
| Jharkhand         | 53335              | 11.48                  | 10   |                            |

| State                | 2017 Rankings | 2016 Rankings | Stage                    |  |  |
|----------------------|---------------|---------------|--------------------------|--|--|
| Maharashtra          | 1             | 1             |                          |  |  |
| Tamil Nadu           | 2             | 2             | Innovation-Driven States |  |  |
| Delhi                | 3             | 3             |                          |  |  |
| Kerala               | 4             | 6             |                          |  |  |
| Goa                  | 5             | 4             |                          |  |  |
| Gujarat              | 6             | 5             |                          |  |  |
| Sikkim               | 7             | 8             |                          |  |  |
| Himachal Pradesh     | 8             | 7             |                          |  |  |
| Haryana              | 9             | 10            |                          |  |  |
| Uttarakhand          | 10            | 9             |                          |  |  |
| Karnataka            | 1             | 1             |                          |  |  |
| West Bengal          | 2             | 4             |                          |  |  |
| Arunachal Pradesh    | 3             | 6             | Investment-Driven States |  |  |
| Andhra Pradesh       | 4             | 2             |                          |  |  |
| Rajasthan            | 5             | 7             |                          |  |  |
| Telangana            | 6             |               |                          |  |  |
| Punjab               | 7             | 3             |                          |  |  |
| Mizoram              | 8             | 5             |                          |  |  |
| Nagaland             | 9             | 9             |                          |  |  |
| Chhattisgarh         | 10            | 8             |                          |  |  |
| <b>Uttar Pradesh</b> | 1             | 1             |                          |  |  |
| Jammu & Kashmir      | 2             | 5             | Factor-Driven States     |  |  |
| Madhya Pradesh       | 3             | 4             |                          |  |  |
| Manipur              | 4             | 2             |                          |  |  |
| Assam                | 5             | 8             |                          |  |  |
| Tripura              | 6             | 3             |                          |  |  |
| Odisha               | 7             | 6             |                          |  |  |
| Meghalaya            | 8             | 9             |                          |  |  |
| Bihar                | 9             | 7             |                          |  |  |
| Jharkhand            | 10            | 10            |                          |  |  |

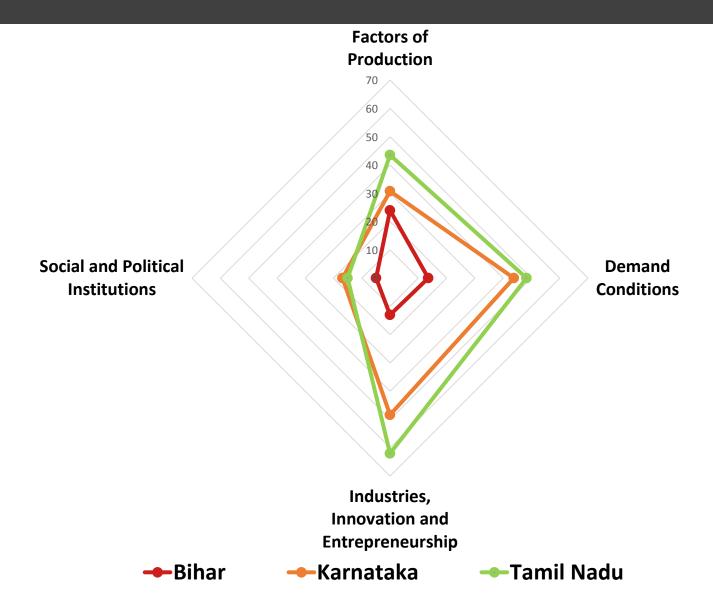
## STATE INNOVATION INDEX



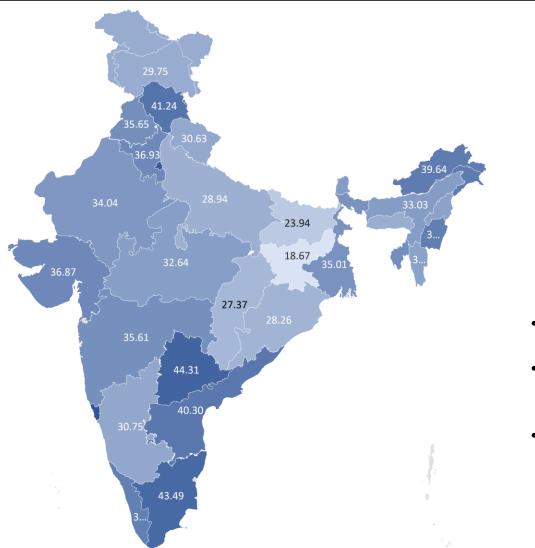


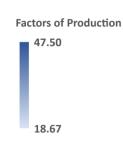
- Maharashtra and Jharkhand are the most and least innovative states in the country
- Innovation seems to be seriously lacking in the resource-rich eastern states
- A maximum score of 43 indicates the potential for Indian states to climb up the innovation ladder

## STAGES OF DEVELOPMENT



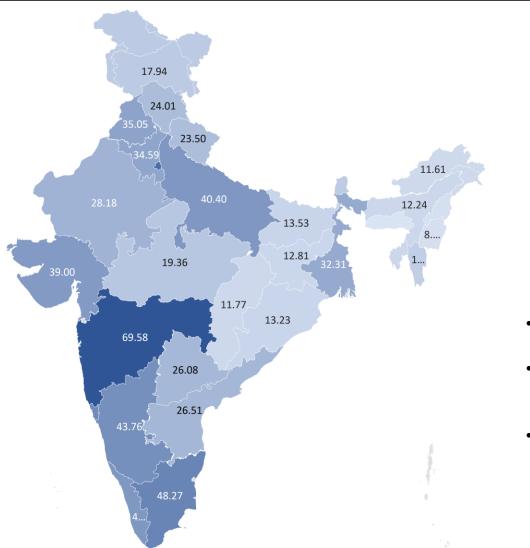
## **FACTORS OF PRODUCTION**

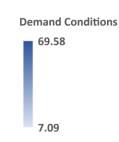




- Goa, Delhi and Telangana are the leading states under this pillar
- Indicative of low infringement on land rights, high labour force participation and high credit availability
- As expected of a developing nation, factors of production is the most developed aspect of Porter's Diamond having the lowest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

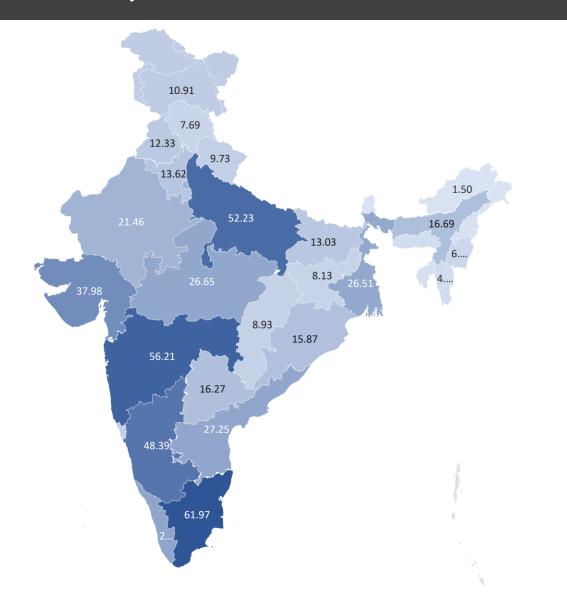
## **DEMAND CONDITIONS**





- 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

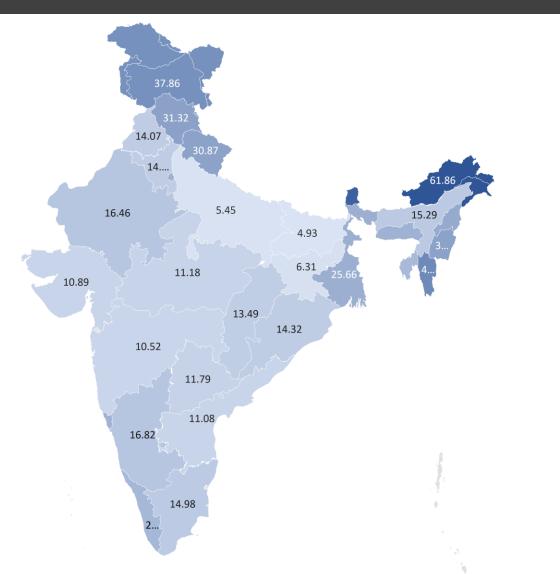
## INDUSTRIES, INNOVATION AND ENTREPRENEURSHIP

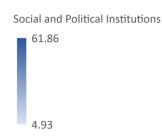




- Tamil Nadu, Maharashtra and Uttar
   Pradesh are the leading states under this pillar
- These states being India's leading manufacturing centres have expectedly done well in innovation and entrepreneurship
- The eastern part of India has been a poor performer in this aspect

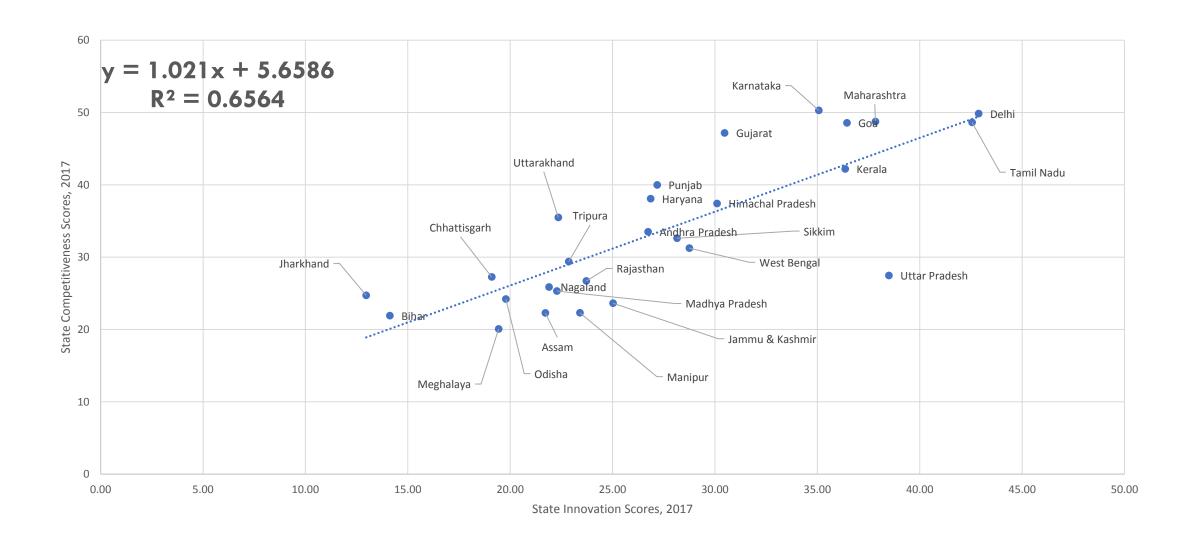
## SOCIAL AND POLITICAL INSTITUTIONS



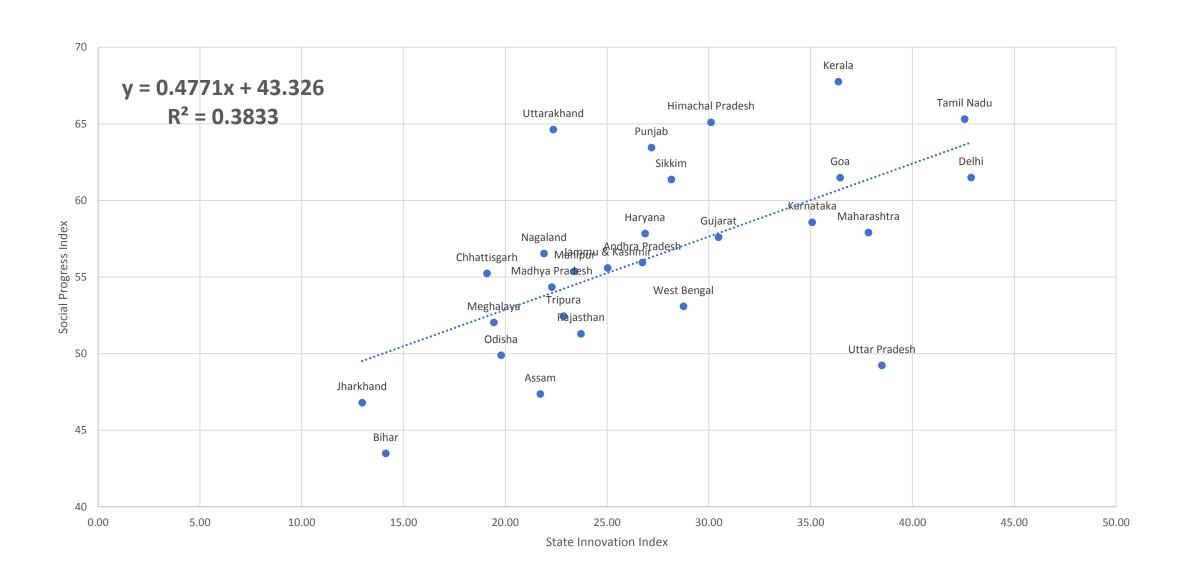


- The map is reflective of India's poor institutional standards.
- Healthcare, educational, financial and administrative institutions have been considered to measure the country's institutional performance
- Eastern and northern-most states have scored the highest. However, that is the case because troubled regions usually have a higher incidence of institutional support

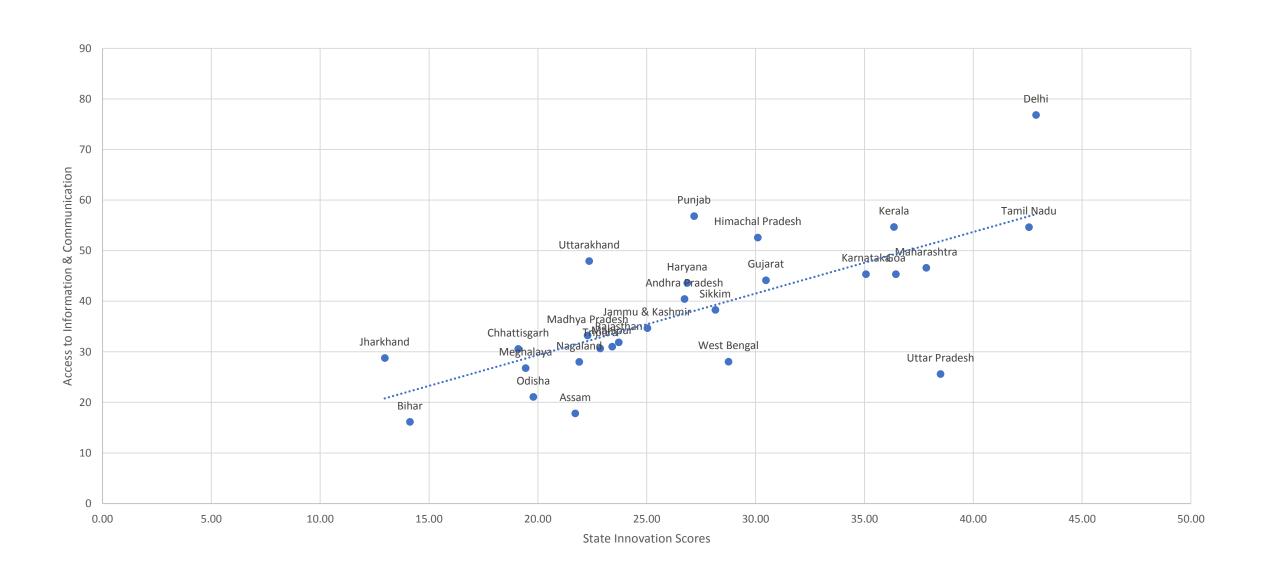
## LINK BETWEEN INNOVATION & COMPETITIVENESS: STATES



#### LINK BETWEEN INNOVATION AND SOCIAL PROGRESS: STATES OF INDIA



# LINK BETWEEN INNOVATION AND ACCESS TO INFORMATION & COMMUNICATION: STATES OF INDIA



#### LINK BETWEEN INNOVATION AND WAGES: STATES OF INDIA

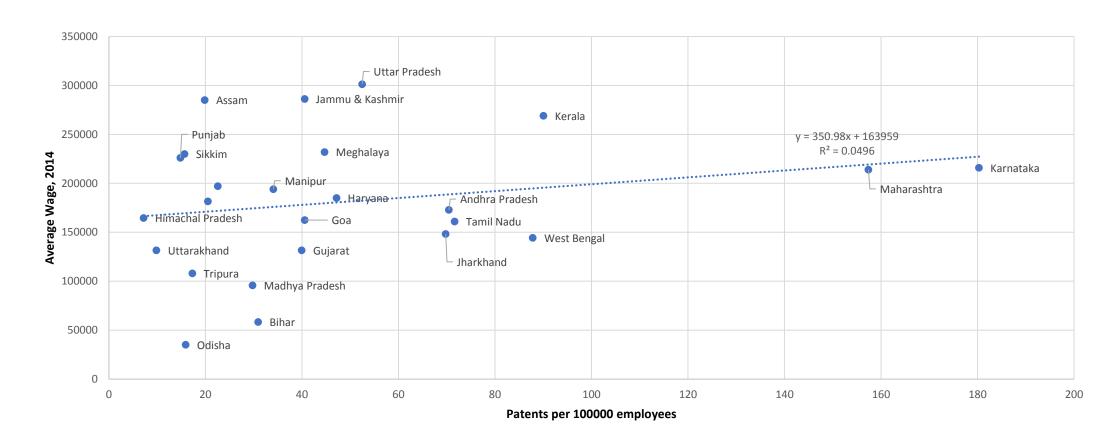


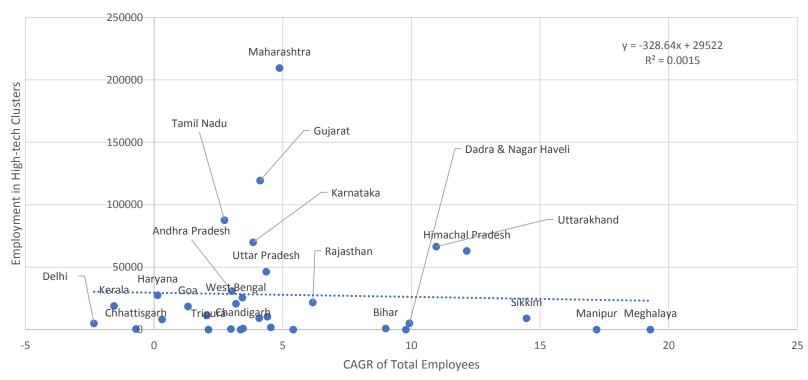
Figure 12. Average Wage vs Patents per 100000 employees by States, 2014

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.

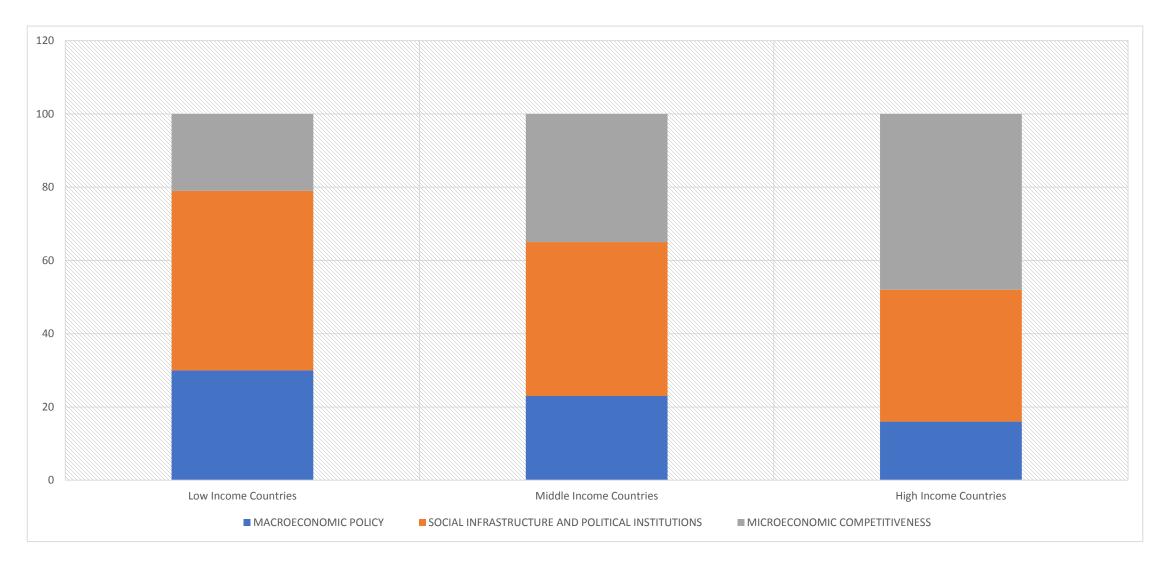
#### **HIGH-TECH CLUSTERS**

#### Employment growth does not show a relationship with the presence of high-tech clusters





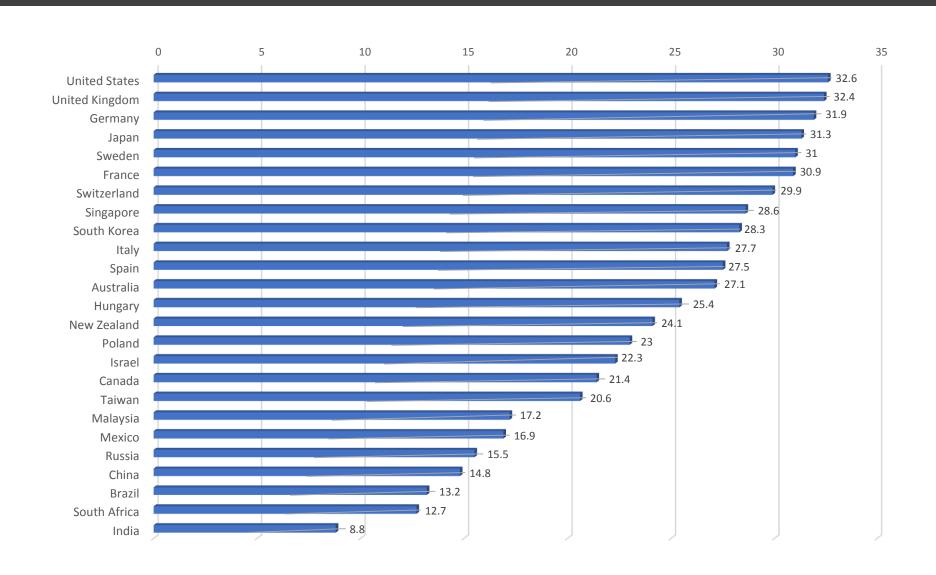
#### **RELATIVE IMPACT BY STAGES OF DEVELOPMENT**

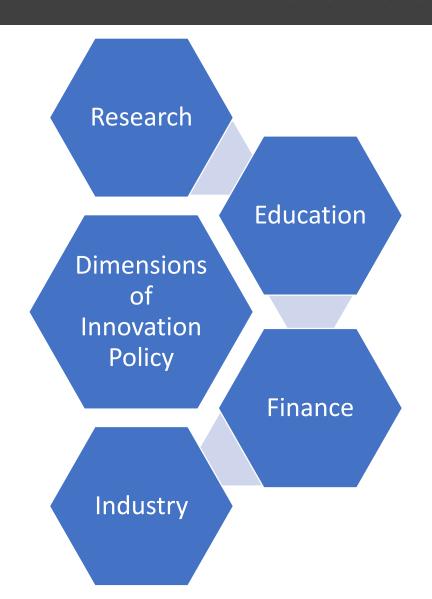


Competitiveness in high-income countries is mainly driven by innovation.

Data: Michael E. Porter and Institute for Strategy and Competitiveness

## GIPC INTERNATIONAL IP INDEX 2017

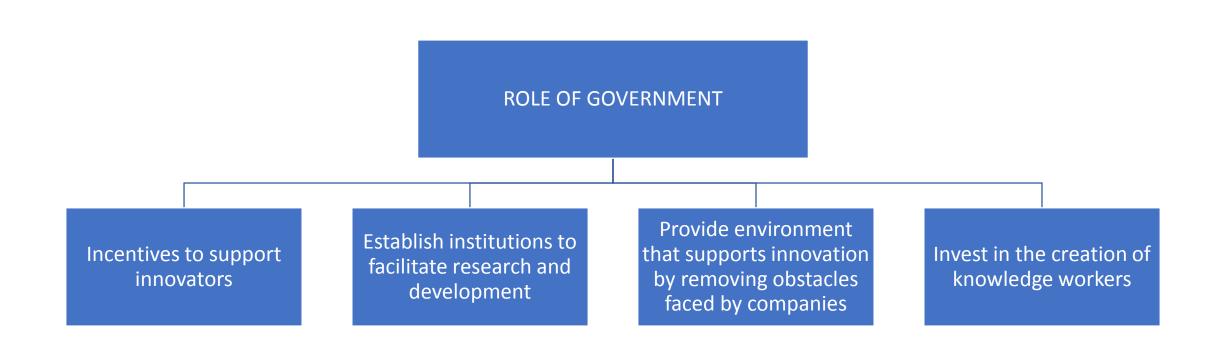


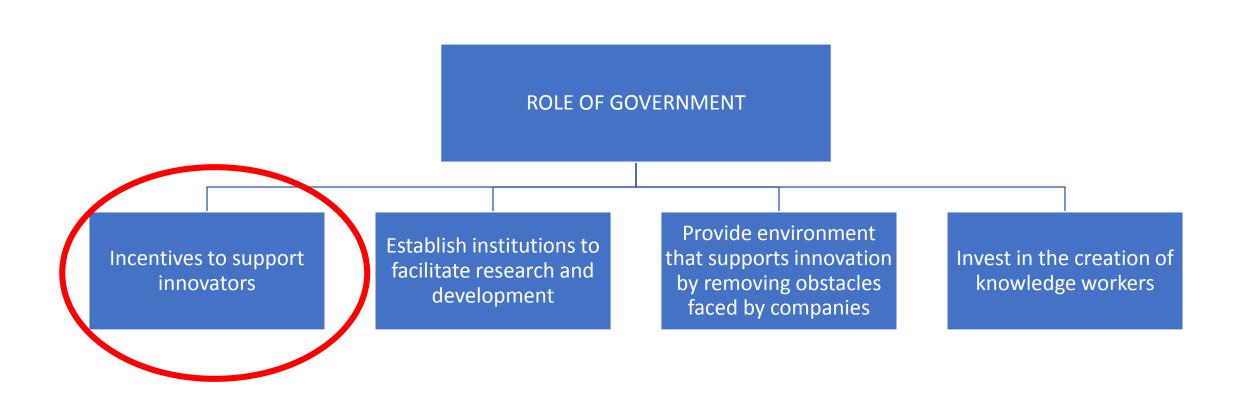


Government can support innovation in two ways:

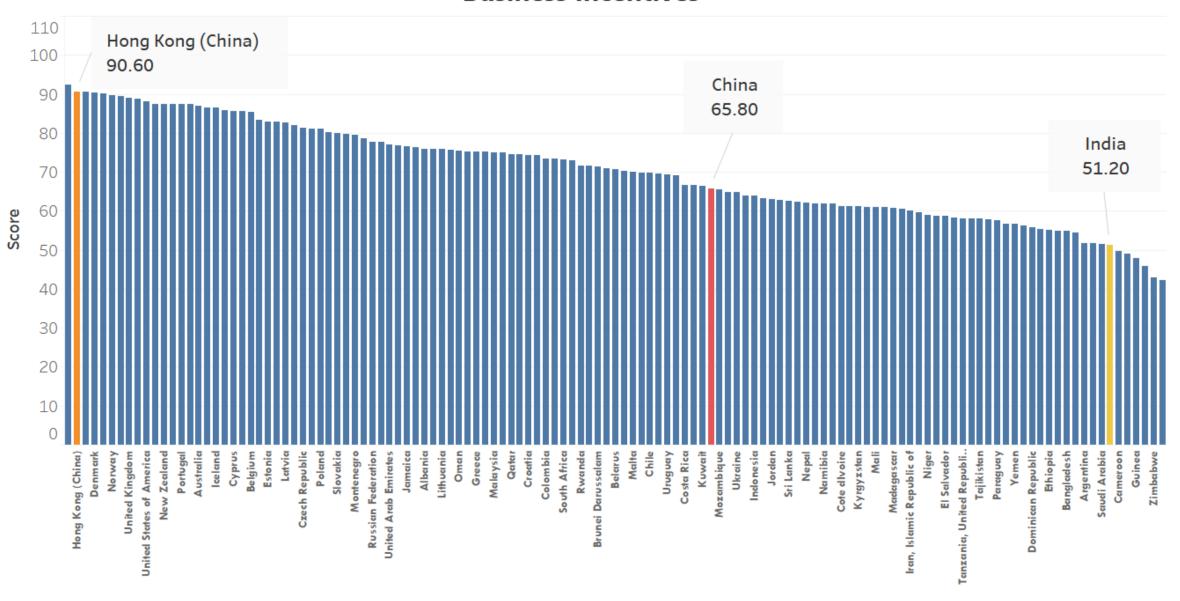
**Directly** - by investing in development of technology

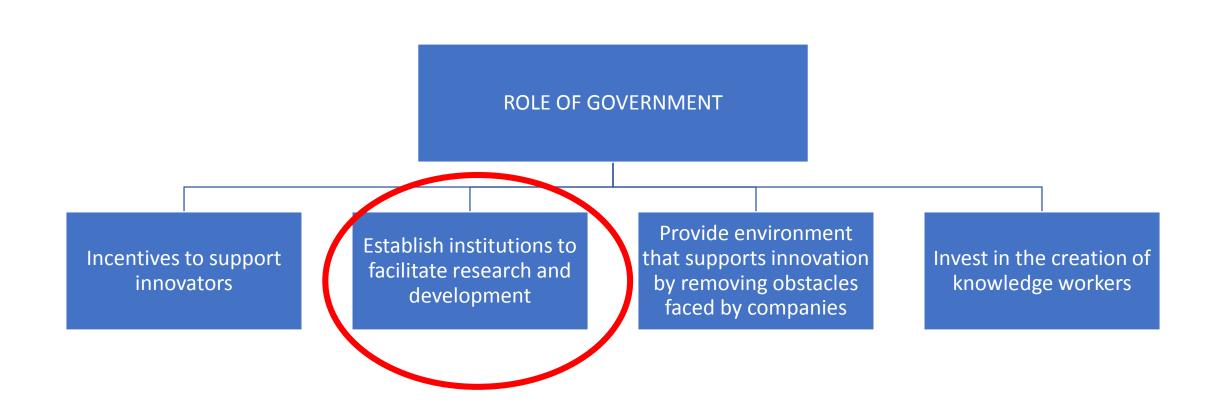
**Indirectly** - by creating an environment that supports research and development.



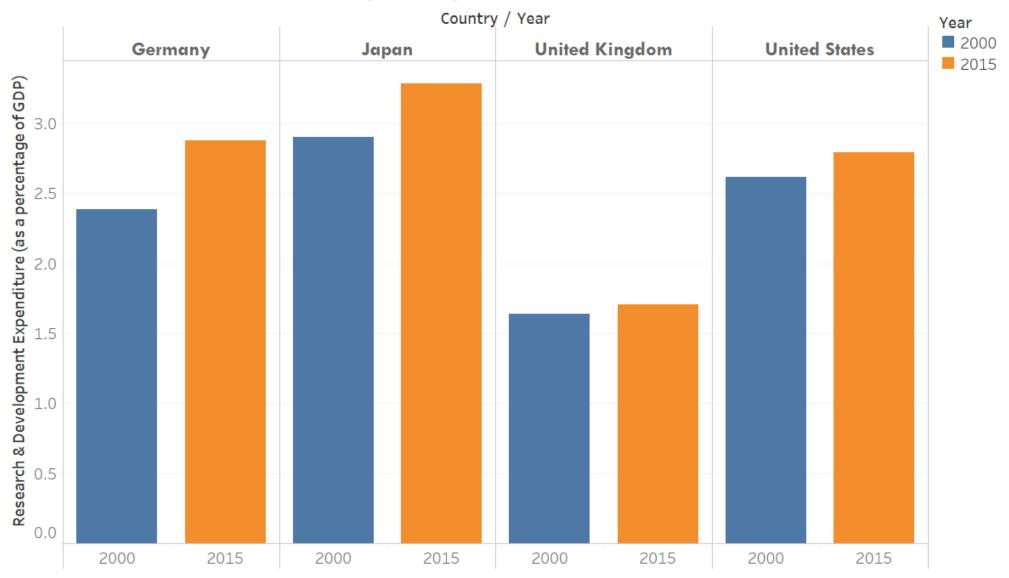


#### **Business Incentives**



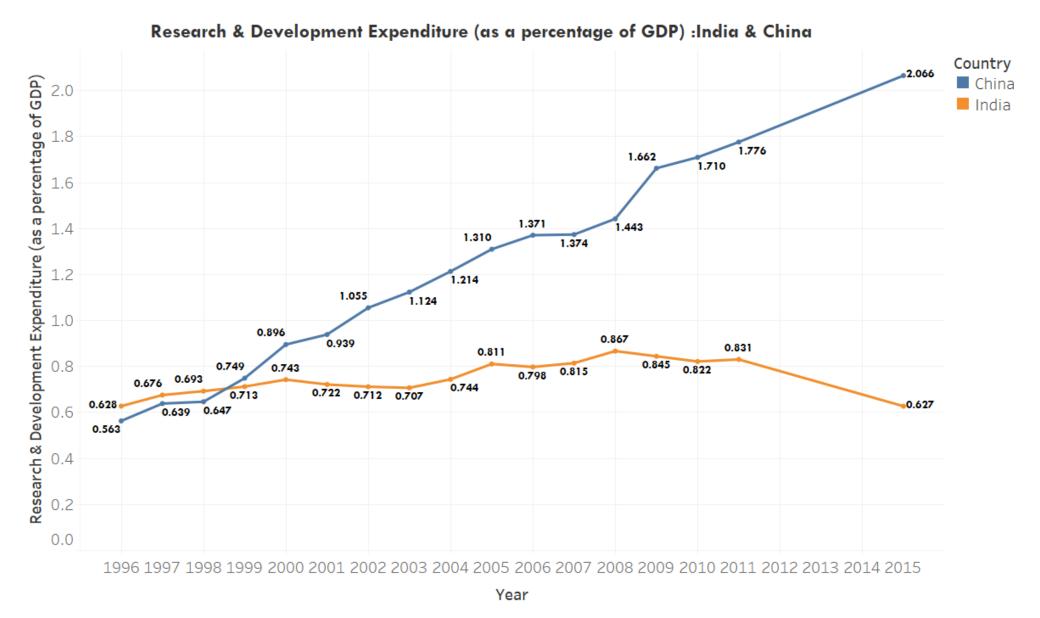


#### Research & Development Expenditure in Mature Economies

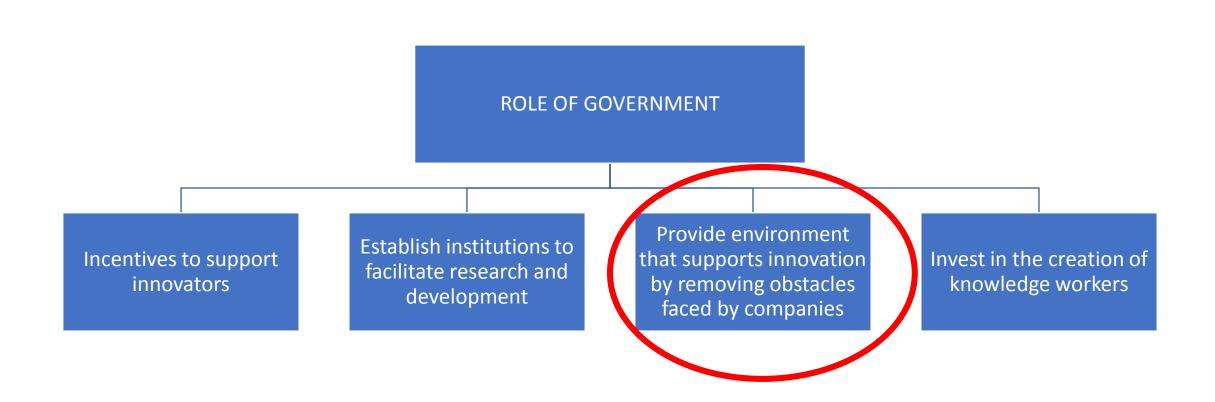


Sum of Research & Development Expenditure (as a percentage of GDP) for each Year broken down by Country. Color shows details about Year.

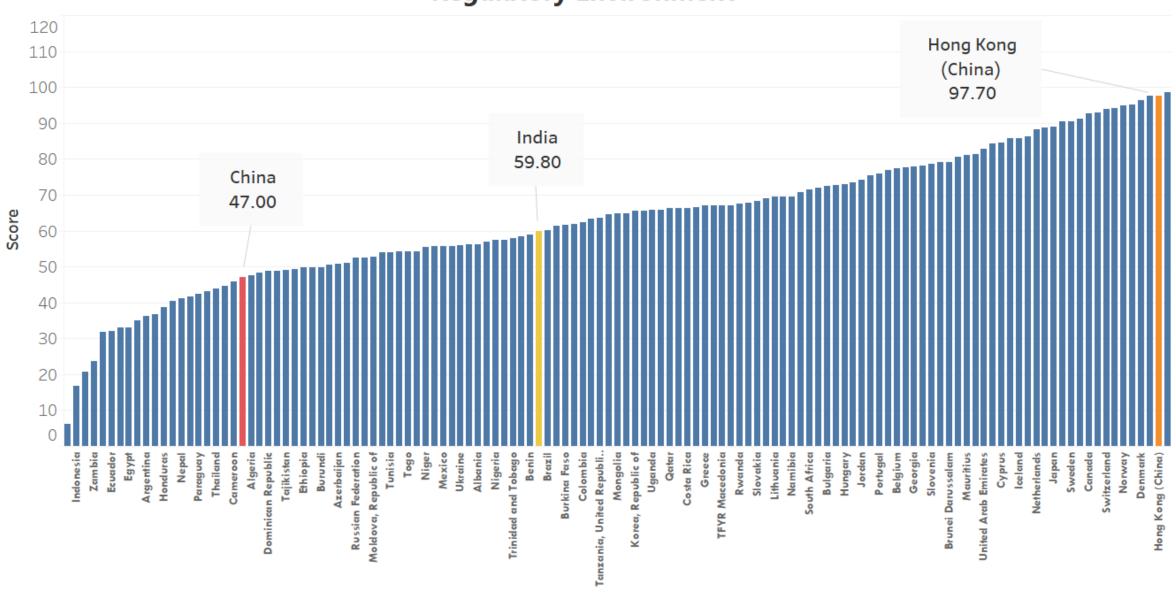
Data: World Bank

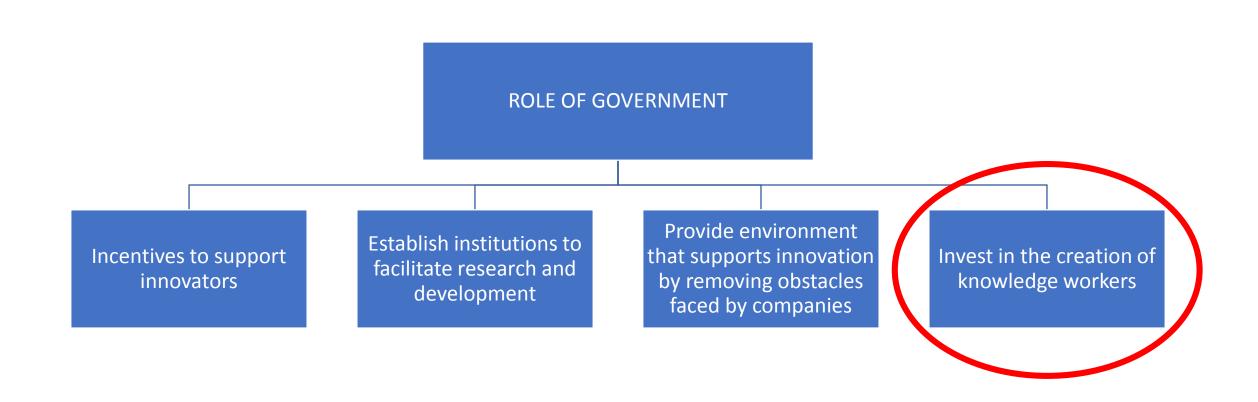


The trend of sum of Research & Development Expenditure (as a percentage of GDP) for Year. Color shows details about Country. The marks are labeled by sum of Research & Development Expenditure (as a percentage of GDP).



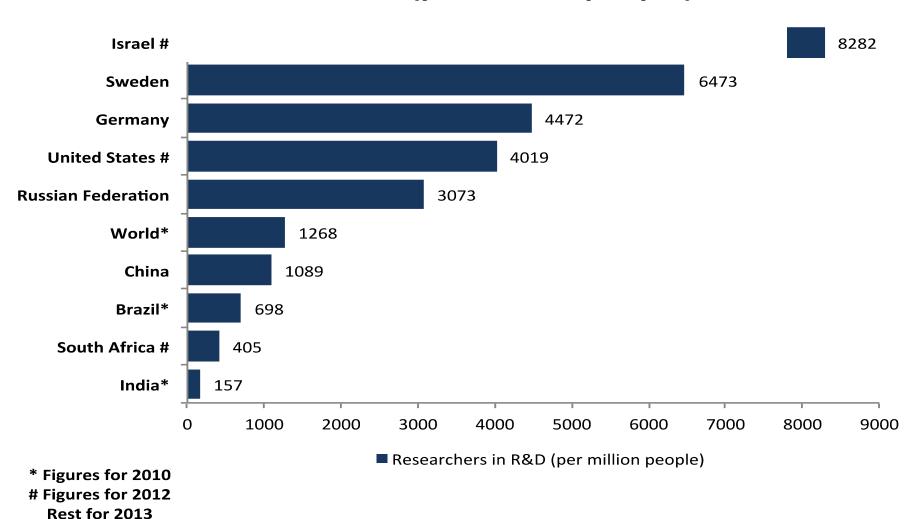
#### **Regulatory Environment**



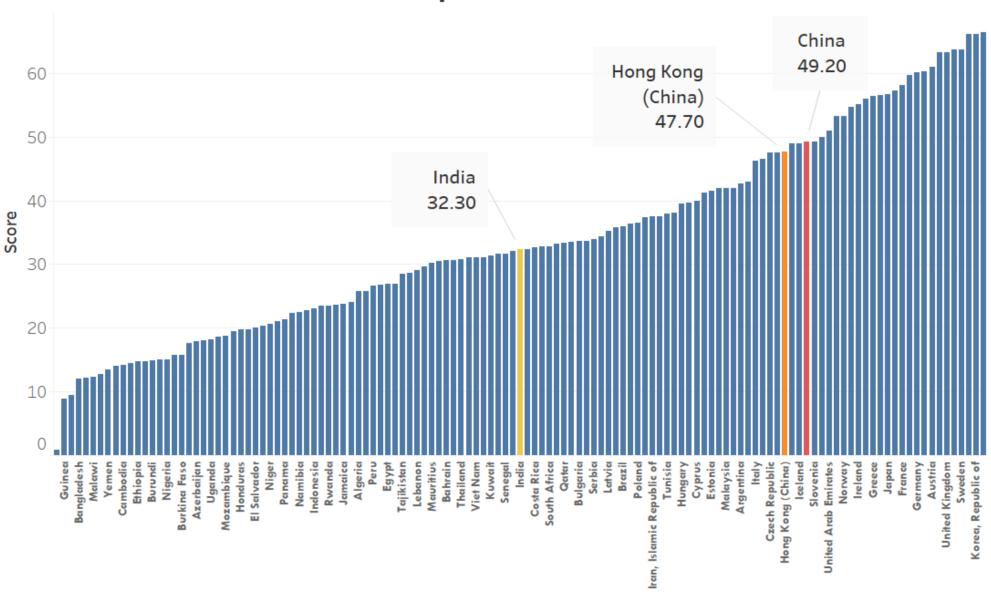


#### **RESEARCHERS IN R&D (PER MILLION PEOPLE) IN 2013**

#### Researchers in R&D (per million people) in 2013



#### **Human Capital and Research**



# WHAT IF A COUNTRY LACKS A ROBUST IP REGIME

### Factor Conditions

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.

Context for Firms
Strategy And Rivalry

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.

#### **Demand Conditions**

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.

Related, Supporting Industries And Institutions

- 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.

Source: Michael E. Porter and Institute for Competitiveness Analysis

#### DOES LACK OF TRUST UNDERMINE COMPETITIVENESS?

## 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 produces will be consumed.

#### 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.

## 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.

#### **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.

#### **HOW CORRUPTION UNDERMINES COMPETITIVENESS?**

## Context for Firms Strategy And Rivalry

- 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.

price.Rent seeking behaviour by bureaucracy.

services at below market

**Factor Conditions** 

Resource allocation is

skewed; providing goods and

- Arbitrary tract for fast track treatment.
- Disincentives for labour to perform.

Related, Supporting Industries And Institutions

- Heightened income disparity.
- Consumer interests are compromised.
- Social versus self-interest.

#### **Demand Conditions**

- 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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