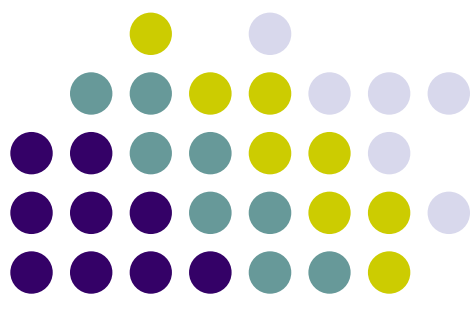


# Challenges to Indian Growth

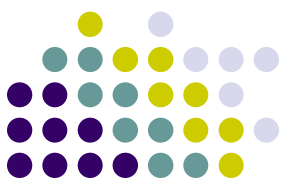
Felix Lam  
Robert Bogolub





# How has India's economic growth been portrayed in the media?

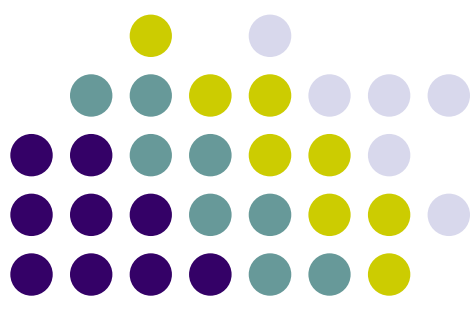


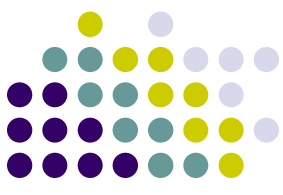


# Agenda

- I. Economic structure & growth accounting
- II. Historical legacy & locating the turnaround
- III. Addressing the issues

# Economic Structure and Growth Accounting

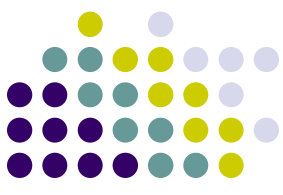




# The Indian situation

- Second largest population in the world
- Very successful service sector, but a poorly performing industrial sector
- Nation of English speakers
- Geographic economic disparity
- Democratic government & traditions
- Strong financial institutions

<b>Economic Structure</b>	History & Turnaround	Addressing the Issues
---------------------------	----------------------	-----------------------



# Comparison with China

	India	China
<b>Population:</b>	1.095 B	1.314 B
<b>Pop. Growth:</b>	1.38%	0.59%
<b>2006 GDP:</b>	\$796.1 B	\$2.512 T
<b>GDP Growth:</b>	8.5%	10.5%

Source: CIA World Factbook

<b>Economic Structure</b>	History & Turnaround	Addressing the Issues
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# India's economic organization

	INDIA		CHINA	
	GDP	Labor	GDP	Labor
Ag.	19.9%	60%	11.9%	45%
Ind.	19.3%	12%	48.1%	24%
Serv.	60.7%	28%	40%	31%

Source: CIA World Factbook

**Economic  
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the Issues



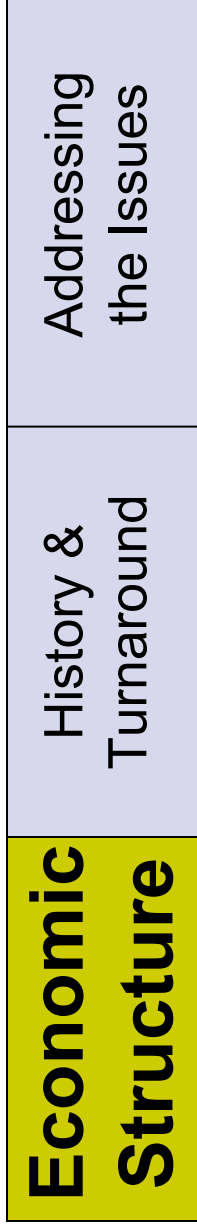
# Growth Accounting

**Table 3. Sources of Economic Growth, Total Economy, 1960-2005**  
Annual percentage rate of change

Period	Output	Employment	Output per Worker	Contribution of:				Factor
				Physical Capital	Land	Education	Productivity	
<b>Total Economy</b>								
1960-04	4.7	2.0	2.6	1.2	-0.1	0.3	1.2	1.2
1960-80	3.4	2.2	1.3	1.0	-0.2	0.2	0.2	0.2
1980-04	5.8	1.9	3.8	1.4	0.0	0.4	2.0	2.0
1960-73	3.3	2.0	1.3	1.1	-0.2	0.1	0.2	0.2
1973-83	4.2	2.4	1.8	0.9	-0.2	0.3	0.6	0.6
1983-93	5.0	2.1	2.9	0.9	-0.1	0.3	1.7	1.7
1993-99	7.0	1.2	5.8	2.4	-0.1	0.4	2.8	2.8
1999-04	6.0	2.4	3.6	1.2	0.1	0.4	2.0	2.0

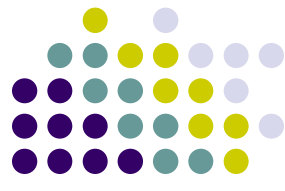
Source: Authors' calculations as explained in text.

Source: Bosworth, Collins, & Virmani. Sources of Growth in the Indian Economy. Brookings Institute, 2006.





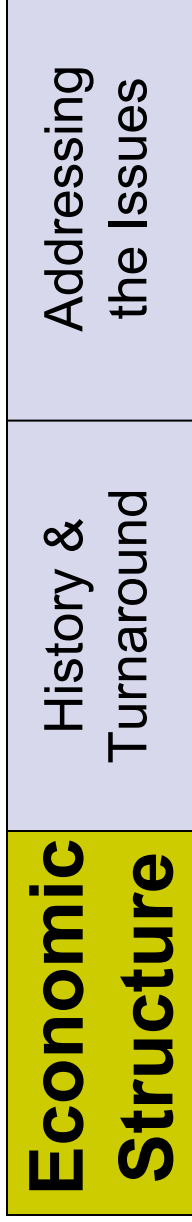
# Growth Accounting: Comparison with China



Figures for 1978-2004

Region	Output	Labor	Output / Worker	Contribution of:			Factor Productivity
				Physical Capital	Land	Education	
China	9.2	2	7.3	3.2	0	0.2	3.7
India	5.4	2	3.3	1.3	0	0.4	1.6
East Asia	7.3	2.7	4.6	2.6	0	0.6	1.4

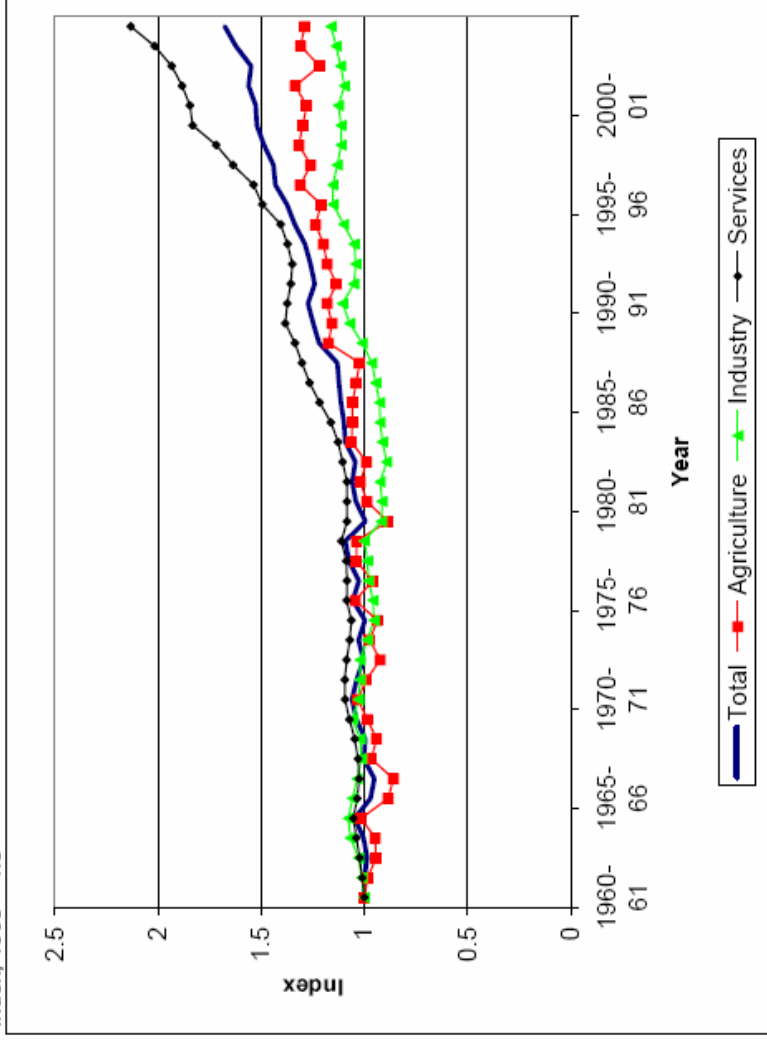
Source: Bosworth & Collins. Accounting for Growth: Comparing China and India. 2006.





# Growth Accounting: Sectoral

Figure 1. Growth in TFP by Major Sector, 1960-2004  
Index, 1960 = 1.0



Source: Authors' calculations as described in text.

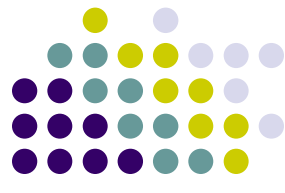
Source: Bosworth, Collins & Virmani. Sources of Growth in the Indian Economy. Brookings Institute, 2006.

**Economic Structure**

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# Sectoral Growth in Output per Worker, 1993-2004



	Total	Agricultural	Industrial	Services	Reallocation
<b>China</b>	8.5	0.7	5	1.7	1.2
<b>India</b>	4.6	0.5	0.9	2.1	1.2

## Analysis:

- **Indian industry** gains primarily due to employment, not capital
- **Indian service-sector** gains due to strong TFP growth, despite relatively weak capital investment

Source: Bosworth & Collins. Accounting for Growth: Comparing China and India. 2006.

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# Educational Attainment

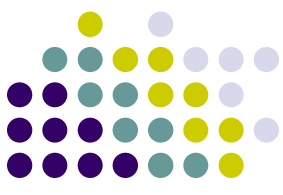
Country	Year	Highest Level Attained			Average Years of School
		No. Below Middle Schooling	Middle Secondary	Post Secondary	
India	1960	72.2	11.1	0.4	1.7
	1980	55.0	23.9	8.6	2.9
	2000	40.7	27.1	16.8	4.5
China	1960				
	1980	34.0	35.6	10.2	4.8
	2000	18.0	43.3	15.5	6.4
Thailand	1960	36.9	47.6	2.3	4.3
	1980	14.4	12.1	6.4	4.4
	2000	12.6	37.9	8.1	6.5
Malaysia	1960	49.7	20.5	3.6	2.9
	1980	26.8	41.0	8.8	5.1
	2000	16.2	48.7	15.8	6.8
Indonesia	1960	68.0	14.5	0.8	1.6
	1980	31.9	29.3	5.7	3.7
	2000	32.1	36.7	12.4	5.0

Source: Bosworth, Collins, & Virmani. Sources of Growth in the Indian Economy. Brookings Institute, 2006.

**Economic Structure**

History & Turnaround

Addressing the Issues

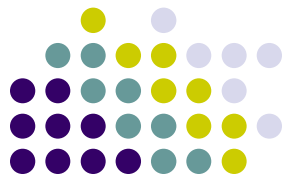


# The traditional growth pattern

- The traditional economic growth recipe relies heavily upon industrial sector expansion
- Industrial growth can lift a large proportion of a country's population out of poverty
- Industry brings in capital and encourages infrastructural development
- Export-driven growth is useful for developing countries
- Yet India is lacking industrial growth

<b>Economic Structure</b>	History & Turnaround	Addressing the Issues
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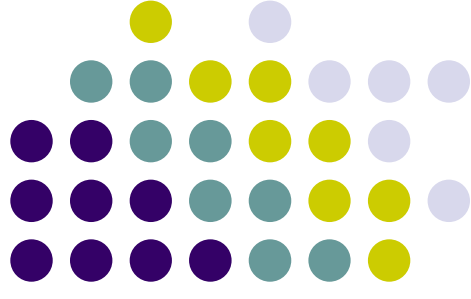
# India's greatest obstacle to growth is its poor industrial sector



- We believe that India's service sector growth cannot substitute for industrial growth indefinitely
- India's large (and quickly growing) population needs abundant industrial jobs to raise living standards
  - Service sector jobs requiring extensive education affect too few people
- We will now address why India's manufacturing sector is performing poorly, and how it can be set right

<b>Economic Structure</b>	History & Turnaround	Addressing the Issues
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# India's Historical Legacy & Locating the Turnaround





# A brief history of India

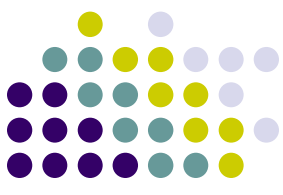
- Relatively industrialized before colonization
  - Textile sector
- British colonization in 19th C. *deindustrialized* India
- But brought strong legal institutions and capital markets
  - Bombay Stock Exchange is the longest-running stock exchange in Asia
- Independence from Britain in 1947

Economic  
Structure

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# Post-independence India

- Prime Minister Nehru (1947-64) responded to the post-British situation
  - Hostility to free trade and multinationals
  - Import substitution in wake of the Great Depression
  - Impressed by Soviet model
- Maintained restrictive British labor laws
- Poor growth resulted
  - 1950-74, GDP growth was less than 1.5%
  - Dubbed the “Hindu rate of growth”

Economic Structure	<b>History &amp; Turnaround</b>	Addressing the Issues
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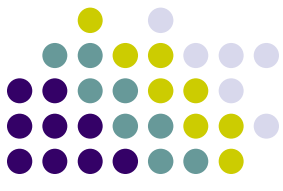
# How bad was India's growth?

- Following Simple Growth Theory, Brad DeLong analyzed India's growth from 1960-1992 compared to other developing countries
- Simple Growth Theory has three determinants of growth:
  - Investment-to-GDP ratio
  - Population growth rate
  - Initial output per worker

Economic  
Structure

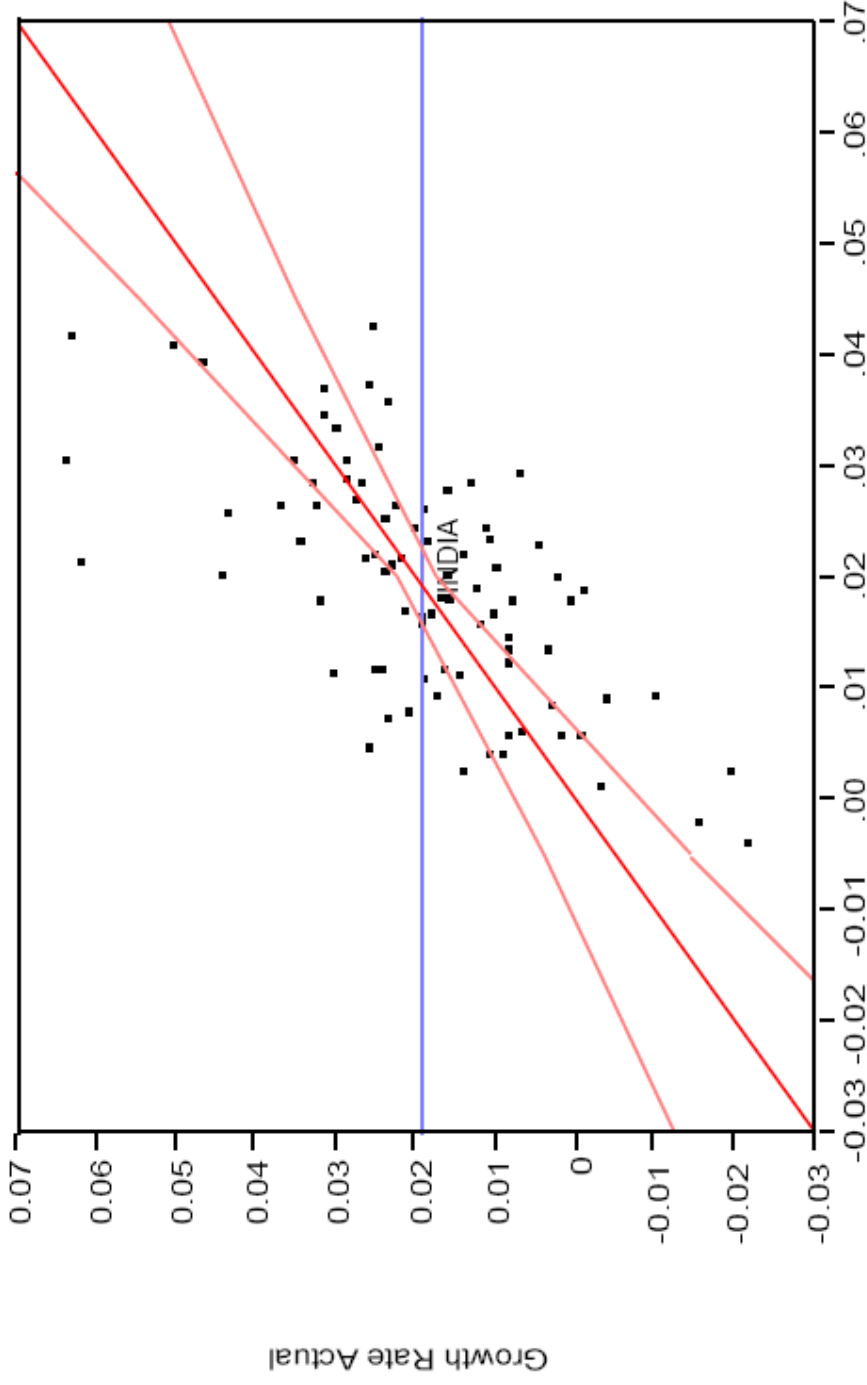
**History &  
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the Issues



# Average India

Figure 1: Actual and Predicted 1960-1992 Output per Worker Growth



Economic  
Structure

**History &  
Turnaround**

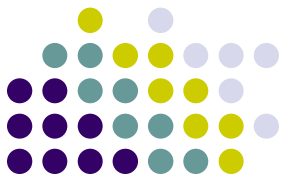
Addressing  
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# This leads to at least one of three conclusions



- 1) Inefficiencies in India were common around the world
- 2) Inefficiencies in central planning were offset by resource mobilization (India had an extremely high savings rate)
- 3) Inefficiencies were detrimental and prevents India from achieving a higher growth path

Economic Structure	<b>History &amp; Turnaround</b>	Addressing the Issues
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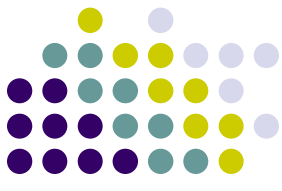


# Pro-market reforms of the 90s

- Reduced import controls / tariffs
- Reformed monetary system
  - Currency float
- Removed licensing requirements for investing
- Lowered tax rates
- Removed private-sector monopolies
- Reformed financial markets

Source: Eichengreen, Economics 115 Lecture Slide, "India", Spring 2006

Economic Structure	<b>History &amp; Turnaround</b>	Addressing the Issues
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# Results

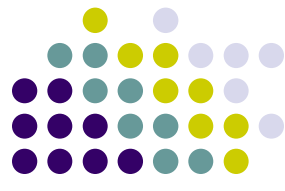
- Growth rate accelerated to 5-6%
- Poverty reduction
- Emergence of IT sector and outsourcing

Economic  
Structure

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the Issues

# Pro-Market reforms led to Indian growth... right?



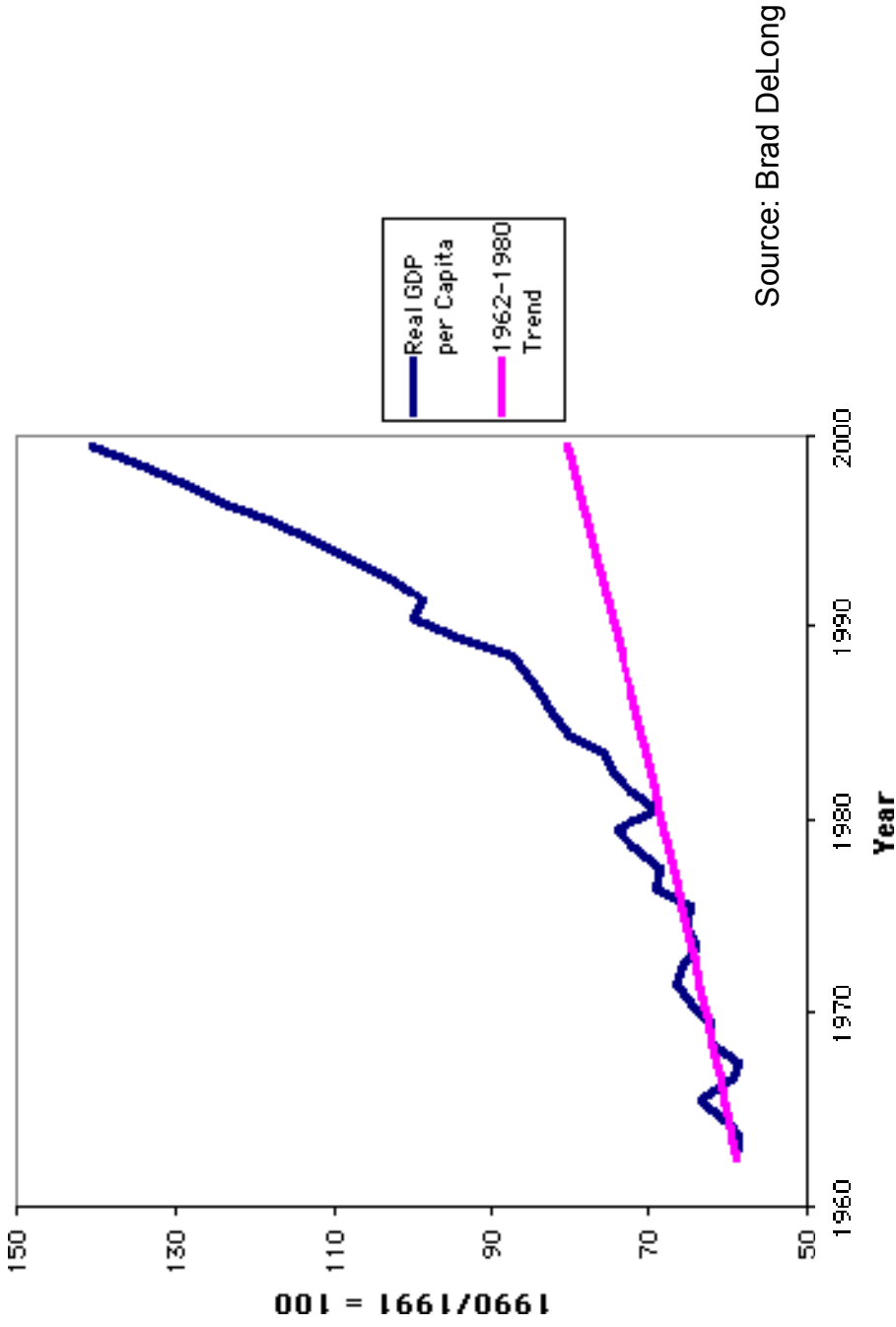
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# ...Yet India's economy took off in the 80s



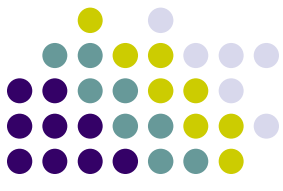
Source: Brad DeLong

Economic Structure

History & Turnaround

Addressing the Issues





# Possible explanations

- Green revolution?
  - Better crops led to improved yields
  - Yet only accounts for 1/10 of the GDP growth
- Huge public investment in the 1980s?
  - From 4% to 8% of GDP
  - Yet a regression by Barro (2000) shows that Indian public investment could lead to only 0.2-0.3% GDP growth

Economic  
Structure

**History &  
Turnaround**

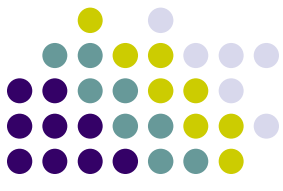
Addressing  
the Issues



## Possible explanations (cont.)

- Internal liberalization?
  - Yet still a long way to go; timing and magnitude could not explain 1980s growth
- External liberalization?
  - Yet India's small manufacturing sector prevented it from reaping substantial benefits

Economic Structure	<b>History &amp; Turnaround</b>	Addressing the Issues
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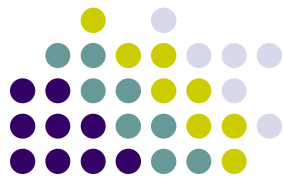
# A pro-business shift?

- Roderick and Subramanian explain 1980s growth stemming from attitudinal shift in the government
  - Pro-business vs. pro-market
- Yet this explanation seems too ephemeral to yield such a massive growth-rate increase...

What do you think?

Economic Structure	<b>History &amp; Turnaround</b>	Addressing the Issues
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# Why services grew but not industry?



- In 1981, India's industrial sector was on par with those of other countries.
- At that time, its service sector actually lagged (in terms of the value-added as a percent of GDP and in terms of employment share)
- However, at that time India did not favor labor intensive industry in 1981; it instead favored skill intensive industry

Value-added by labor intensive industry

Value-added by non-labor intensive industry

Economic Structure	<b>History &amp; Turnaround</b>	Addressing the Issues
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# Why did some states accelerate faster than others?



- Some states simply had a larger capacity for growth (initially)
- Kochhar, et al. used a diversification index to capture each state's capacity for growth
- Diversification is a proxy for the amount of highly skilled human capital



# Initial Diversification and States' NDSP Growth



QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.

Economic Structure	<b>History &amp; Turnaround</b>	Addressing the Issues
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# The role of decentralization

- Decentralization led to India's states being more in control of their growth paths
- Some states had inherent qualities that enabled them to take advantage of the liberalization reforms and boost their service sectors
  - Quality of infrastructure
  - Amount of investment
  - Education level
  - Financial sector strength

Economic  
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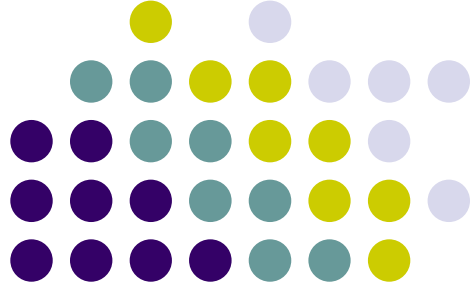
# Indian State Divergence

**Table 11: The State of India's States**

	Index Rating						
	Investment Climate 2/ (1)	Infrastructure Penetration 3/ (2)	Financial Sector Strength 4/ (3)	Mass Media Penetration 5/ (4)	Primary Schooling in English 6/ (5)	Adult Literacy Rate 7/ (6)	Colonial Land Tenure Index 8/ (7)
<b>Leading States /1</b>							
Delhi	3.1	3.7	3.9	3.3		81.8	0.88
Tamil Nadu	3.1	2.6	2.4	2.6	12.9	73.7	0.71
Kerala	2.8	2.5	2.1	2.5	6.0	90.9	1.00
Maharashtra	2.3	2.8	3.5	2.5	2.5	77.3	0.72
Gujarat	2.4	2.3	2.2	2.5	0.2	70.0	1.00
Punjab	2.9	2.5	2.2	2.1		70.0	0.85
Karnataka	2.7	2.4	2	2.3	6.6	67.0	1.00
Group Average	2.8	2.7	2.6	2.6	5.7	75.8	0.88
<b>Middle States /1</b>							
Andhra Pradesh	2.3	2.1	1.6	2.1	12.5	61.1	0.67
Himachal Pradesh	2.3	1.6	1.8	2.4	4.6	77.1	
Haryana	2.5	2	1.7	1.4	1.2	68.6	0.81
Uttaranchal	2	2	1.4	1.9	0.9	72.3	
West Bengal	1.2	2	2	1.5	19.9	69.2	0.00
Jammu & Kashmir		1.5	1.8	1.4		54.5	
Rajasthan	1.6	1.3	1.2	1.5	0.5	61.0	0.00
Group Average	2.0	1.8	1.6	1.7	6.6	66.3	0.37
<b>Lagging States /1</b>							
Madhya Pradesh	1.8	1.2	1.1	1.1	1.4	64.1	0.02
Assam	1.5	1.1	1.1	0.8	1.7	64.3	0.89
Chhattisgarh	1.9	1.1	0.6	1	1.2	65.2	
Uttar Pradesh	1.4	1	0.9	1.2	0.9	57.4	0.45
Orissa	1.7	0.8	1	0.8	2.7	63.6	0.35
Jharkhand	1	0.6	1	1	1.4	54.1	
Bihar	0.4	0	0.3	0.1	1.1	47.5	0.00
Group Average	1.4	0.8	0.9	0.9	1.5	59.3	0.34



# Addressing the Issues Facing the Indian Economy

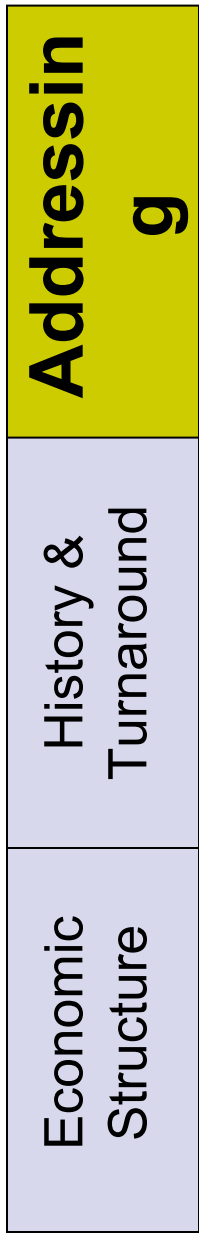


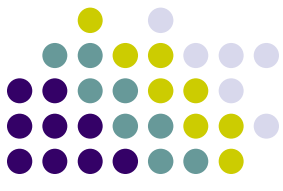
# Whose economic structure does India most closely resemble?



(Percentage of GDP)

	China	India	USA
<b>Agriculture</b>	11.9%	19.9%	0.9%
<b>Industry</b>	48.1%	19.3%	20.4%
<b>Services</b>	40%	60.7%	78.6%

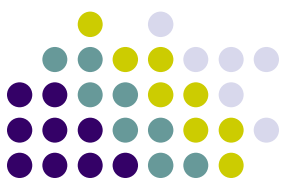




# Divergence amongst states

- India's current strategy is leading to state divergence in investment and growth
  - Fast growing peninsular states vs. sluggish hinterlands
- Can the inland states catch up with the growth of the peninsular states?

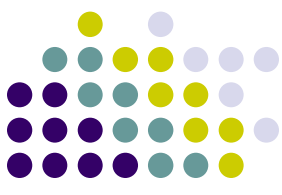
Economic Structure	History & Turnaround	Addressing
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# What Can India Do?

- The lagging states need to follow a more traditional pattern of growth: labor-intensive manufacturing
  - Easier to employ the masses
  - Easier to export manufactured goods
- What has prevented India from doing such a thing in the first place? Harmful regulation is the primary culprit.

Economic Structure	History & Turnaround	<b>Addressing</b>
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# Regulations and labor laws

- While India has made reforms in the early 90s, it still suffers from draconian restrictions
  - High level of tariffs compared to China
- Restrictive labor laws
  - A firms cannot fire workers if it has more than 100 employees
  - This yields numerous small firms in industries where economies of scale would be helpful

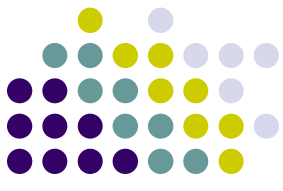
Economic Structure	History & Turnaround	<b>Addressing</b>
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# A comparison of average firm size



QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Economic Structure	History & Turnaround	Addressing
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# India's pathway to growth

- Dual-track growth: industrial growth in the inland states alongside continued service-sector expansion
- Pruning regulations and labor laws relating to manufacturing
  - Allow people to be fired
  - Encourage industrial firms to achieve economies of scale
  - Gradually wean India off of import-substituting policies to force domestic industry to become competitive in the international marketplace
- Investing in education, especially in primary and secondary education for the general public
- Investing in public infrastructure
  - Focus on aiding industry

Economic Structure	History & Turnaround	Addressing
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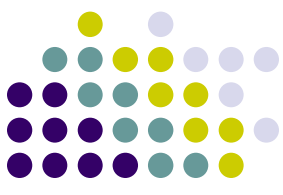


# Is corruption hindering Indian growth?

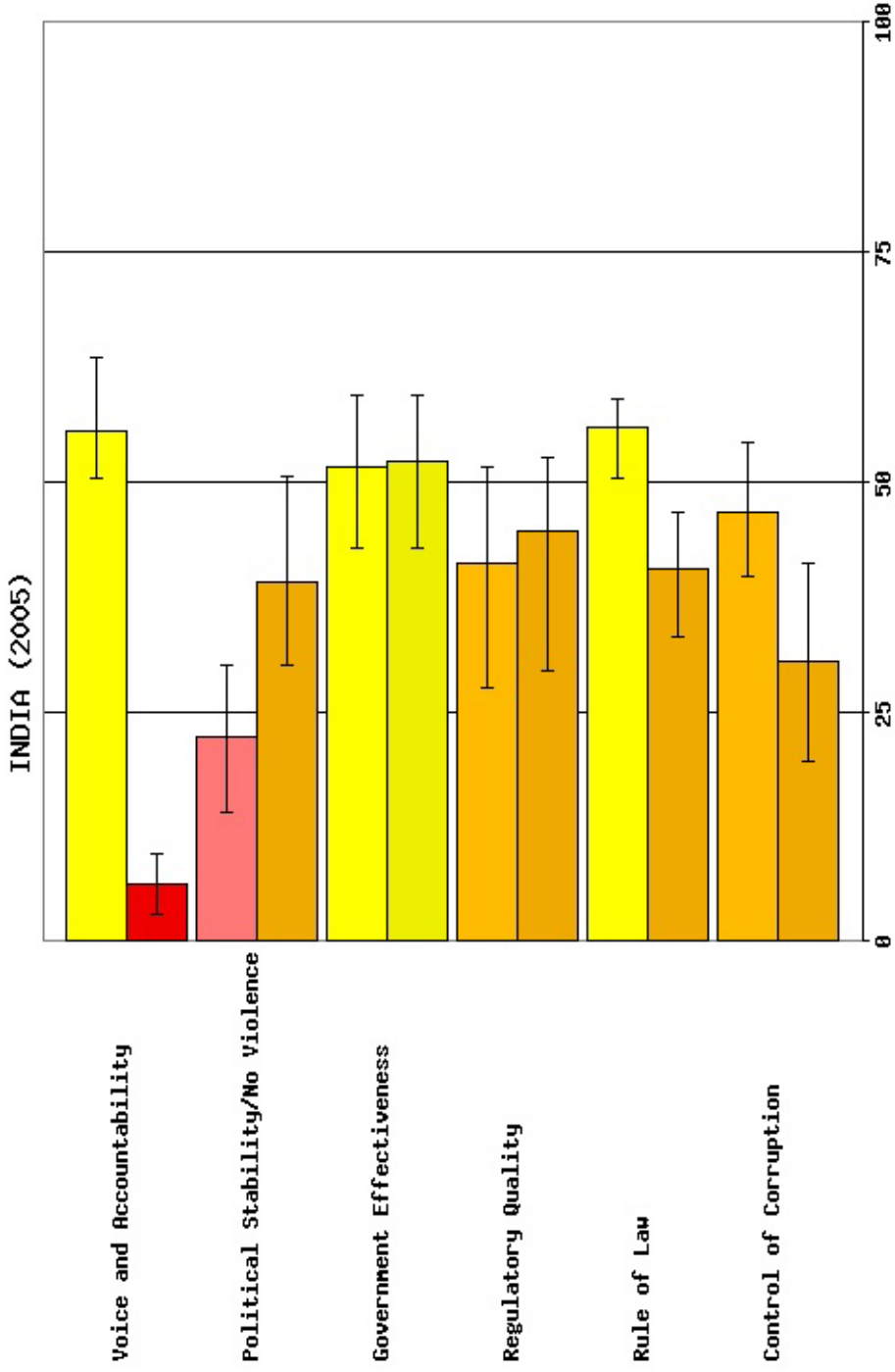
We initially thought so, but...

Economic Structure	History & Turnaround	<b>Addressing</b>
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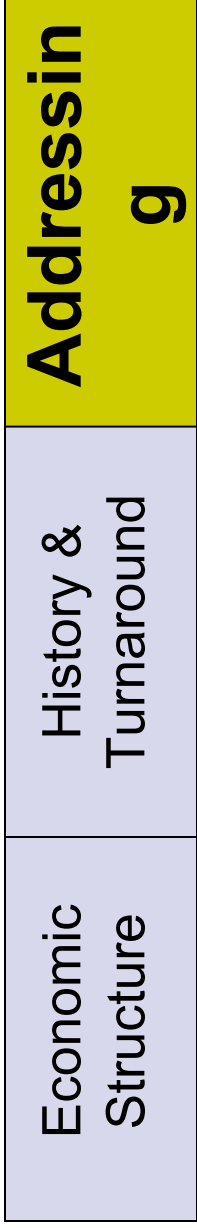
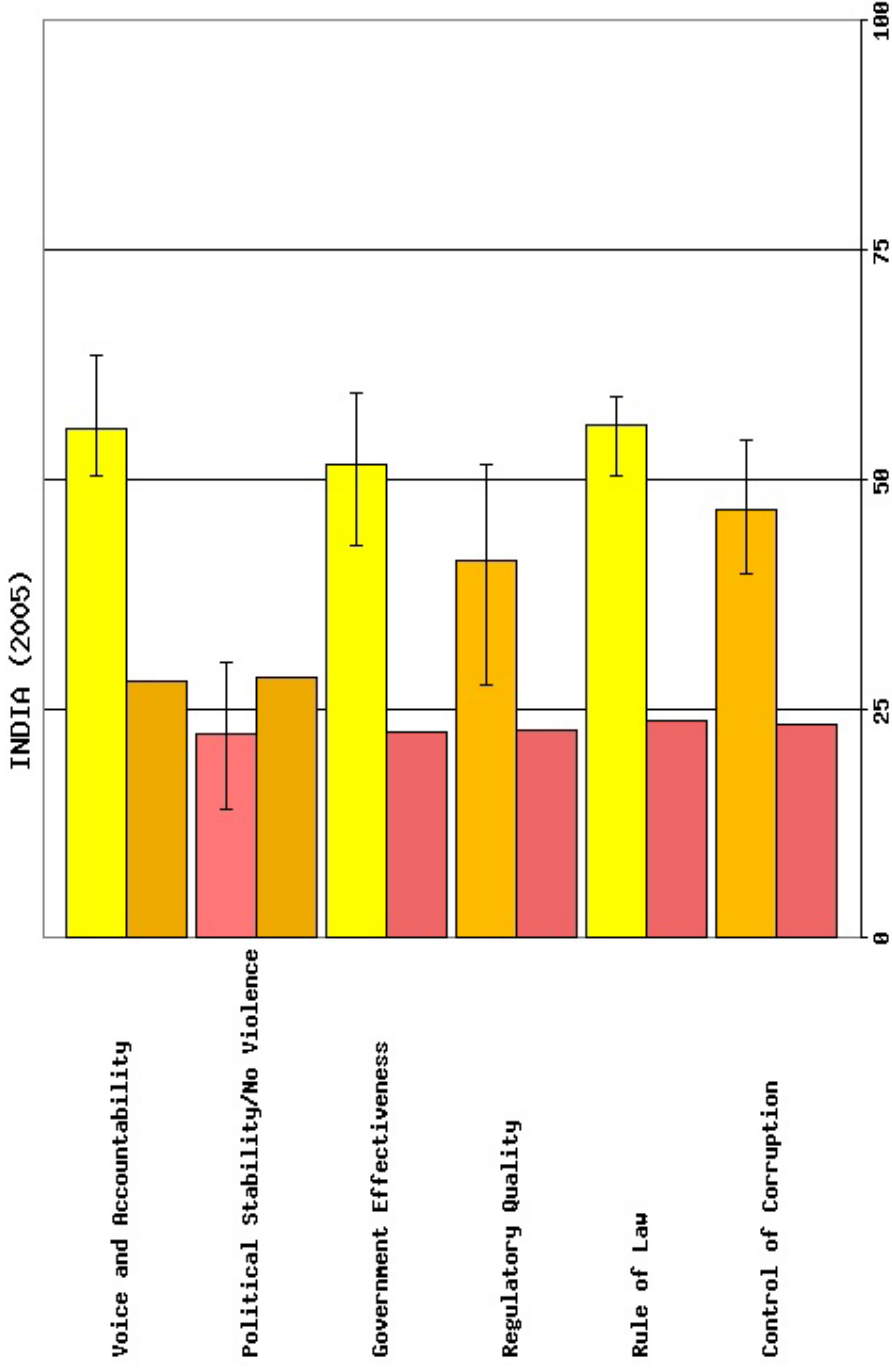
# Indian corruption levels compare favorably with Chinese levels...



Economic Structure	History & Turnaround	Addressing
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# ...and with those of countries of comparable economic development





# Takeaways

- Indian growth stems primarily from its service sector
- Capital has had relatively small role in Indian growth
- The British left strong institutions, but their legacy inspired harmful regulations and policies
- Indian growth increased in the 80s, before the neoliberal reforms of the 90s
- The key to improving the Indian growth rate, and to minimizing economic disparity, is industrial reform
- Corruption levels are actually better than those of comparator countries

**That's a wrap, folks!**

