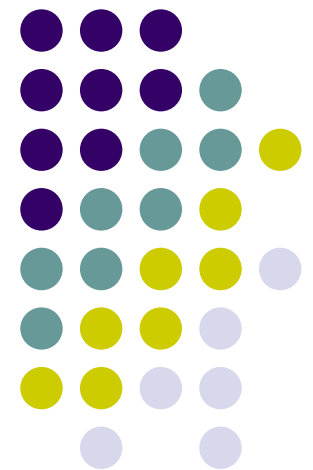
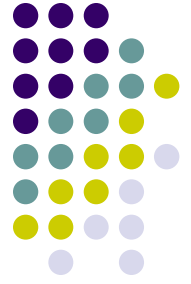


Challenges to Indian Growth

Felix Lam
Robert Bogolub





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

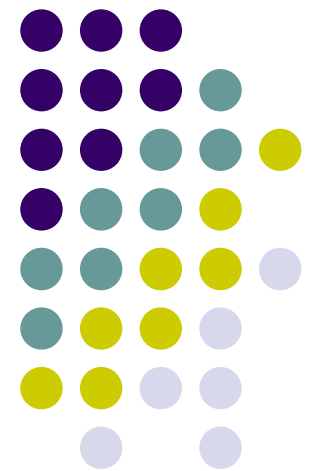


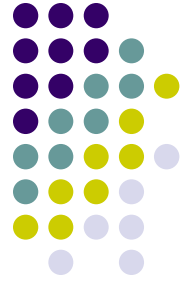
Agenda



- 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

**Economic
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Comparison with China

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

Source: CIA World Factbook

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India's economic organization

	I N D I A		C H I N A	
	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

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

Source: Authors' calculations as explained in text.

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

Economic Structure

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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.

**Economic
Structure**

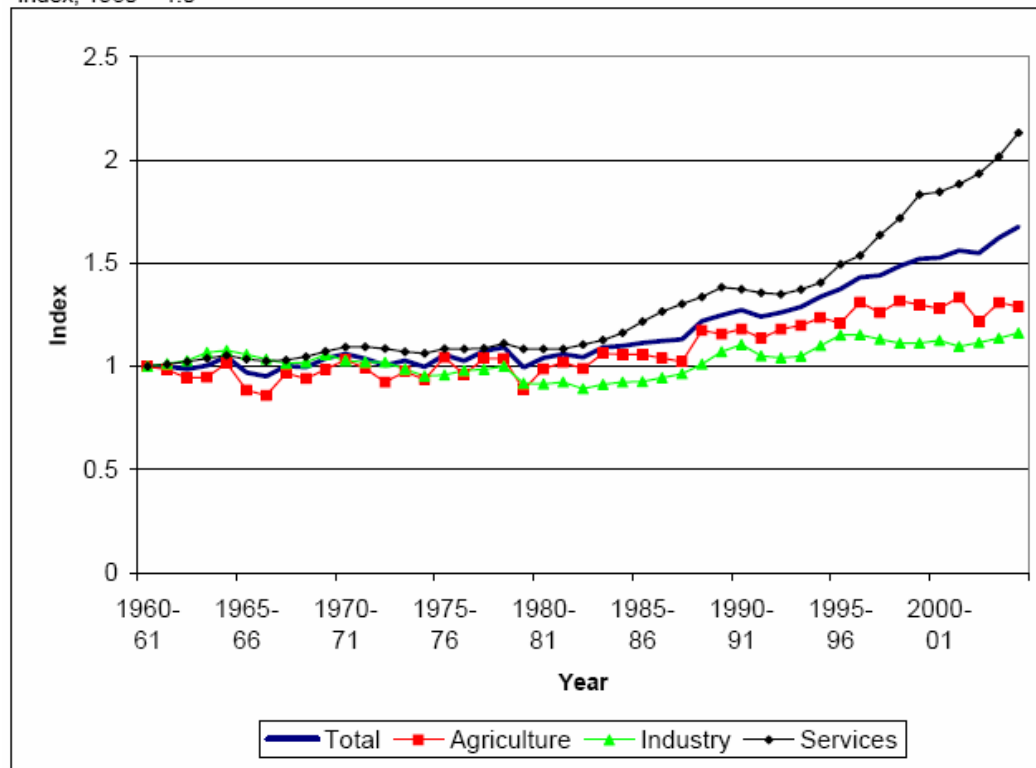
History &
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Growth Accounting: Sectoral

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



Source: Authors' calculations as described in text.

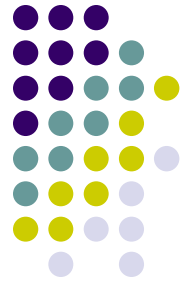
Source: Bosworth, Colins & Virmani. Sources of Growth in the Indian Economy. Brookings Institute, 2006.

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Sectoral Growth in Output per Worker, 1993-2004



	Total	Agricultural	Industrial	Services	Reallocation
China	8.5	0.7	5	1.7	1.2
India	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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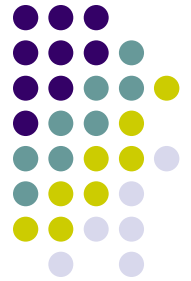


Educational Attainment

Country	Year	Highest Level Attained					Average Years of School
		No Schooling	Below Middle	Middle	Secondary	Post Secondary	
India	1960	72.2	16.2	11.1	0.4	0.00	1.7
	1980	55.0	10.0	23.9	8.6	2.61	2.9
	2000	40.7	9.9	27.1	16.8	5.60	4.5
China	1960						
	1980	34.0	19.5	35.6	10.2	0.60	4.8
	2000	18.0	21.1	43.3	15.5	2.10	6.4
Thailand	1960	36.9	12.7	47.6	2.3	0.40	4.3
	1980	14.4	66.1	12.1	6.4	0.90	4.4
	2000	12.6	34.5	37.9	8.1	7.00	6.5
Malaysia	1960	49.7	25.0	20.5	3.6	1.10	2.9
	1980	26.8	22.2	41.0	8.8	1.10	5.1
	2000	16.2	16.4	48.7	15.8	2.90	6.8
Indonesia	1960	68.0	16.8	14.5	0.8	0.00	1.6
	1980	31.9	33.0	29.3	5.7	0.10	3.7
	2000	32.1	18.2	36.7	12.4	0.50	5.0

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

Economic Structure	History & Turnaround	Addressing the Issues
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The traditional growth pattern

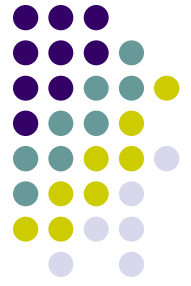
- The traditional economic growth recipe relies heavily upon industrial sector expansion
- Industrial growth can lift a large proportion of a country's population out of poverty
- Industry brings in capital and encourages infrastructural development
- Export-driven growth is useful for developing countries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

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India's greatest obstacle to growth is its poor industrial sector



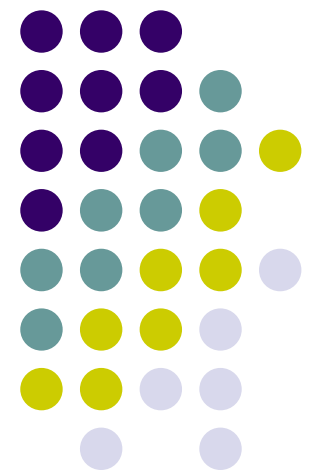
- We believe that India's service sector growth cannot substitute for industrial growth indefinitely
- India's large (and quickly growing) population needs abundant industrial jobs to raise living standards
 - Service sector jobs requiring extensive education affect too few people
- We will now address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

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India's Historical Legacy & Locating the Turnaround

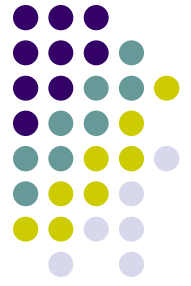




A brief history of India

- 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

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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”

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How bad was India's growth?



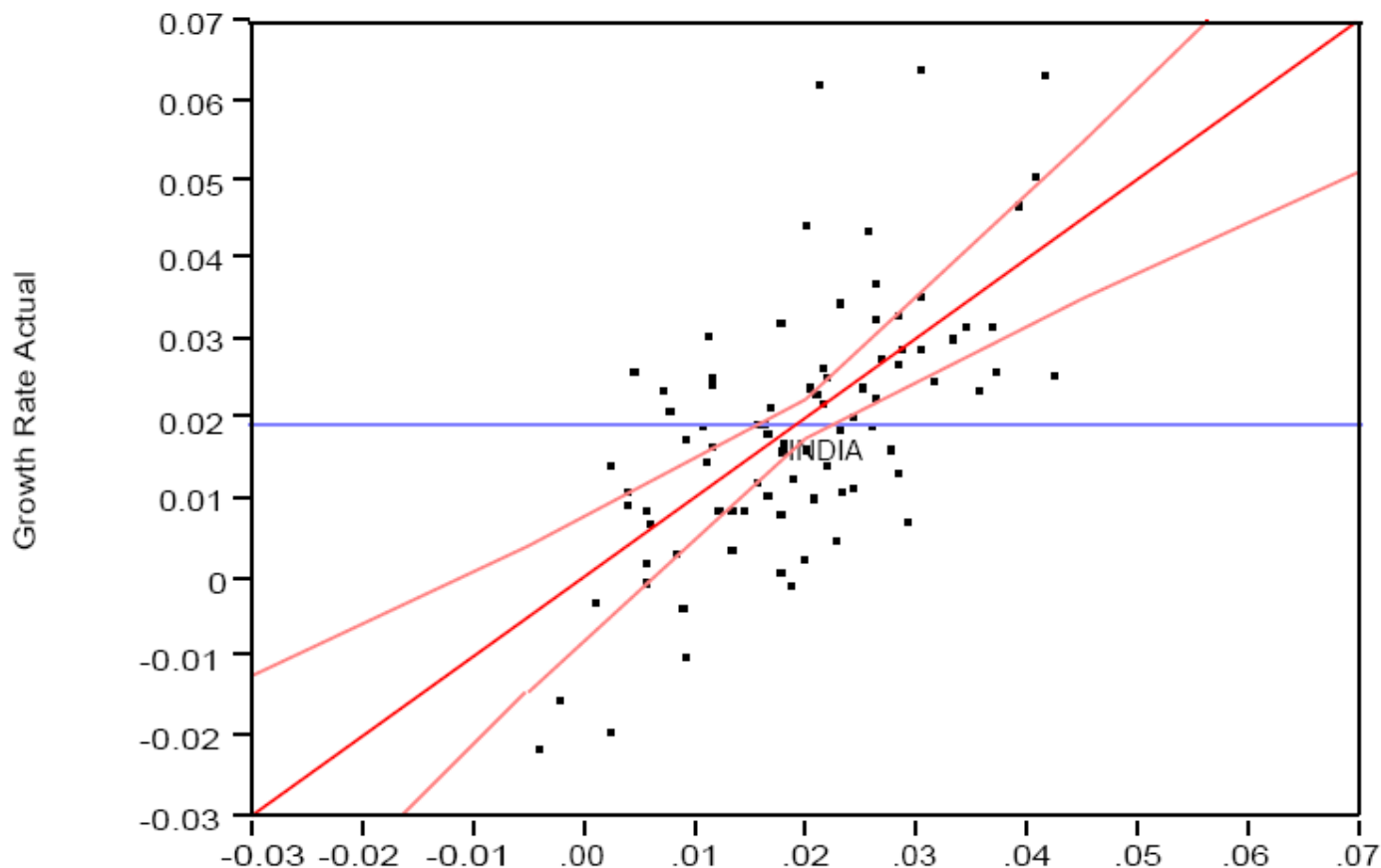
- Following Simple Growth Theory, Brad DeLong analyzed India's growth from 1960-1992 compared to other developing countries
- Simple Growth Theory has three determinants of growth:
 - Investment-to-GDP ratio
 - Population growth rate
 - Initial output per worker

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Average India



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

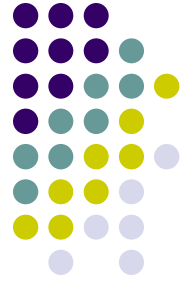


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This leads to at least one of three conclusions



- 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

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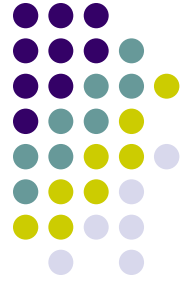


Pro-market reforms of the 90s

- 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	History & Turnaround	Addressing the Issues
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Results

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

Economic Structure	History & Turnaround	Addressing the Issues
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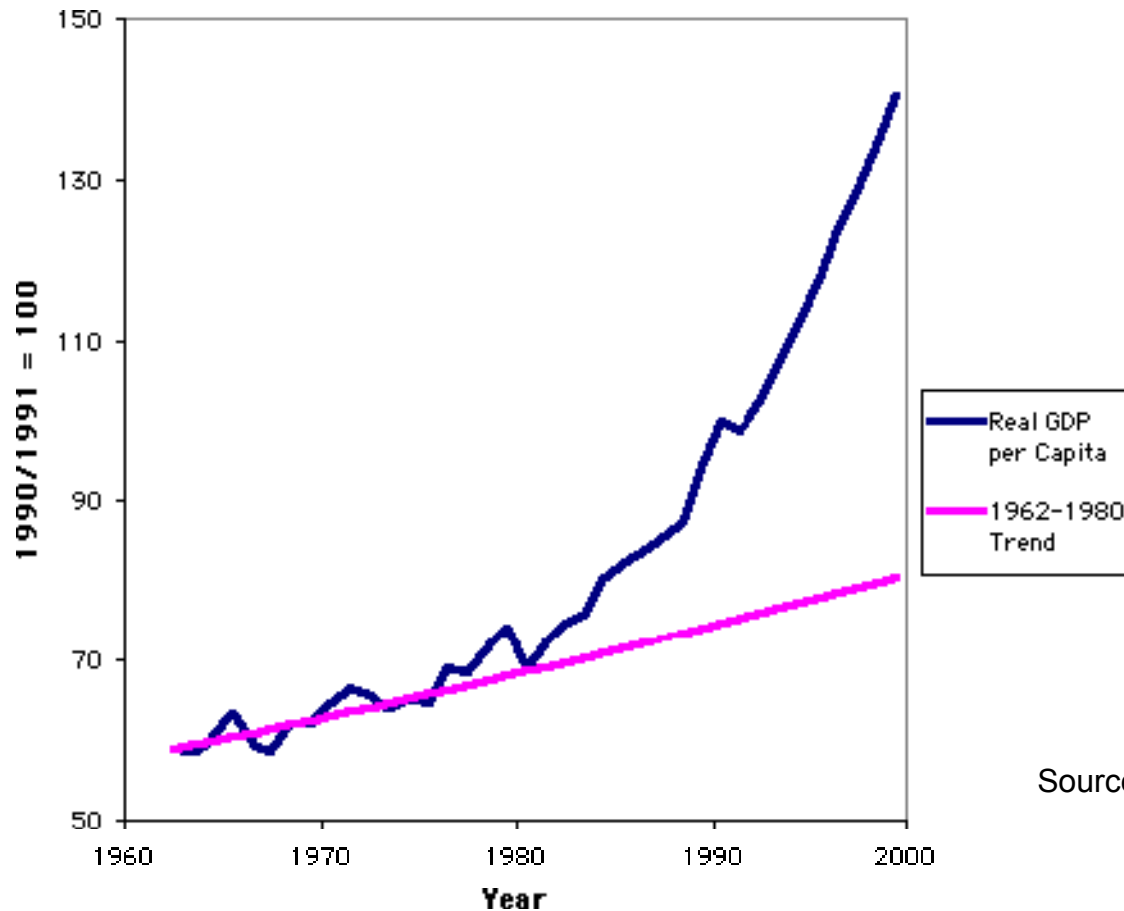
Pro-Market reforms led to Indian growth... right?



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



Source: Brad DeLong

Economic
Structure

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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

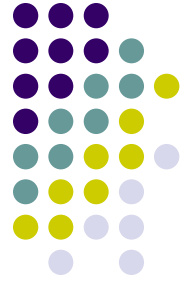
Economic Structure	History & Turnaround	Addressing the Issues
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Possible explanations (cont.)

- 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

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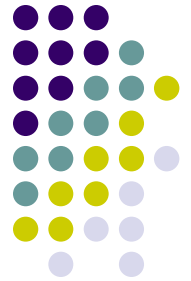
A pro-business shift?

- 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?

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Why services grew but not industry?

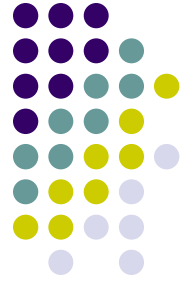


- In 1981, India's industrial sector was on par with those of other countries.
- At that time, its service sector actually lagged (in terms of the value-added as a percent of GDP and in terms of employment share)
- However, at that time India did not favor labor intensive industry in 1981; it instead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

Value-added by labor intensive industry
Value-added by non-labor intensive industry

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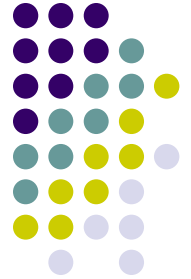
Why did some states accelerate faster than others?



- 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

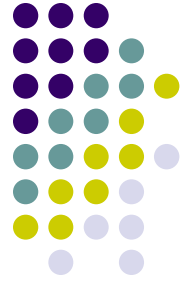


Initial Diversification and States' NDSP Growth



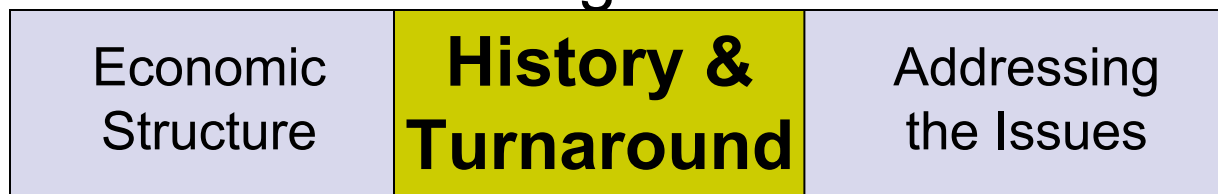
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TIFF (LZW) decompressor
are needed to see this picture.

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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



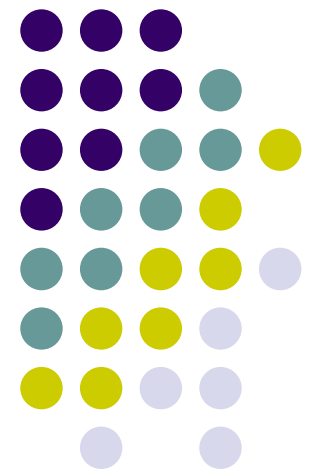


Indian State Divergence

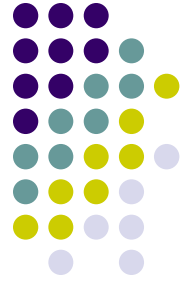
Table 11: The State of India's States

	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)
	Index Rating						
Leading States /I							
Delhi	3.1	3.7	3.9	3.5		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
Middle States /I							
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
Lagging States /I							
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	59.5	0.34

Addressing the Issues Facing the Indian Economy



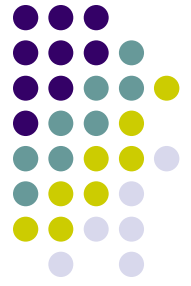
Whose economic structure does India most closely resemble?



(Percentage of GDP)

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

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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?

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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.

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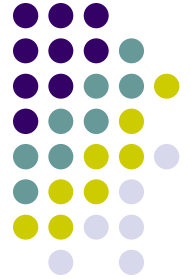


Regulations and labor laws

- 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

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A comparison of average firm size



QuickTime™ and a
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are needed to see this picture.

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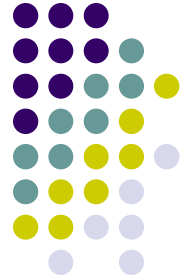


India's pathway to growth

- 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

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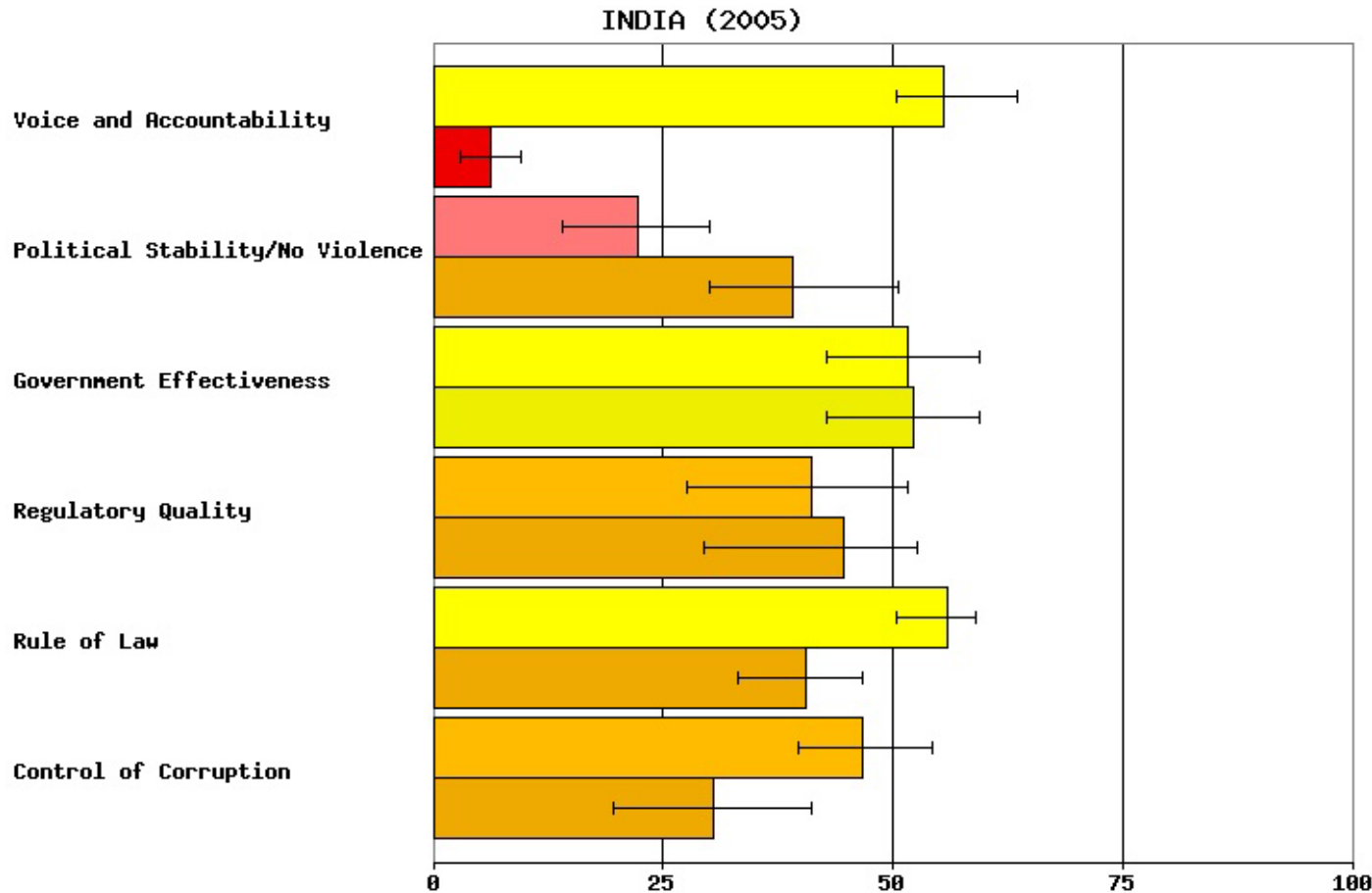
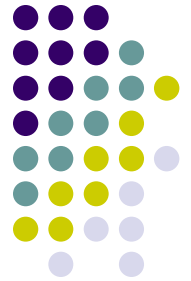
Is corruption hindering Indian growth?



We initially thought so, but...

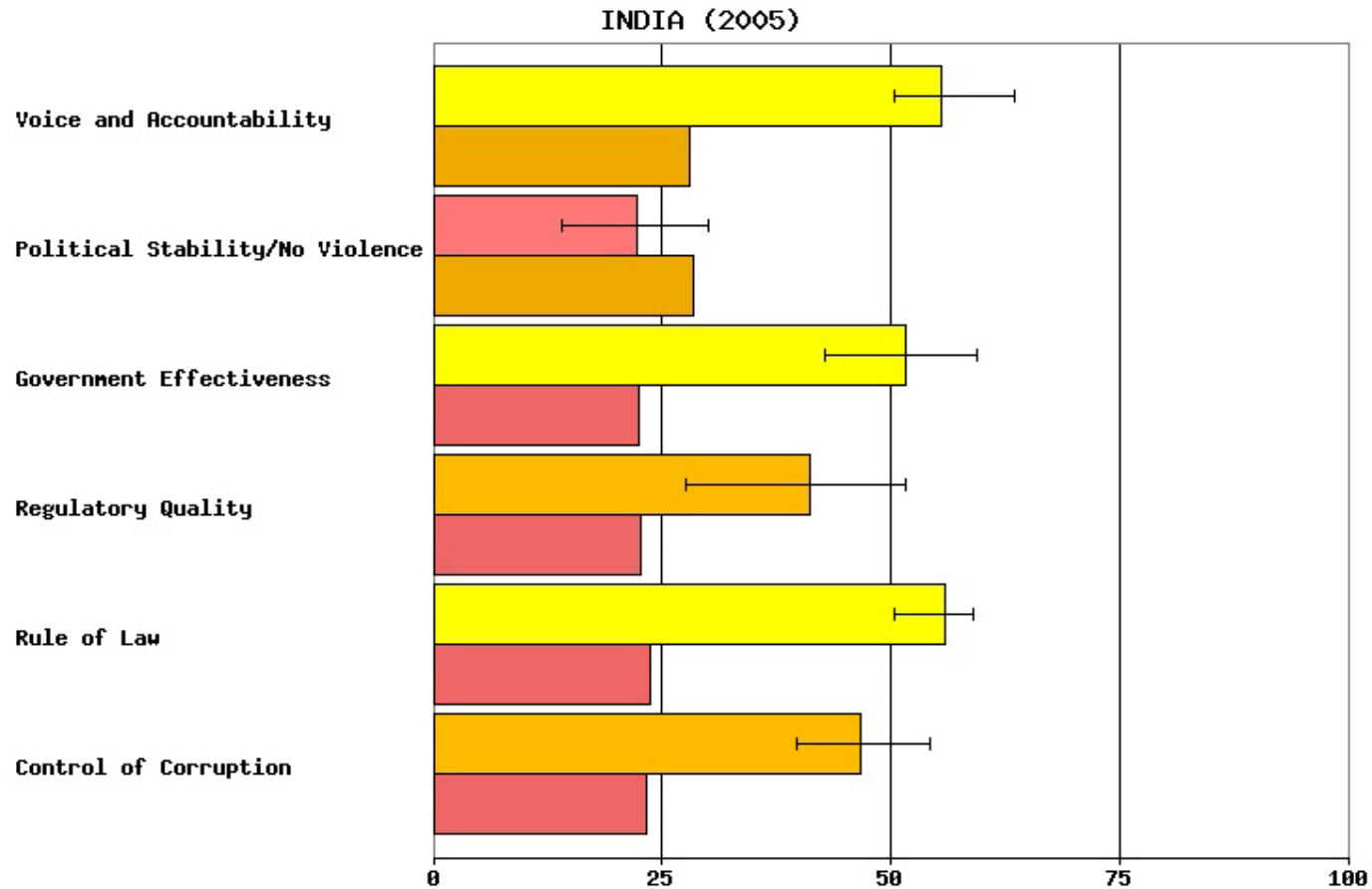
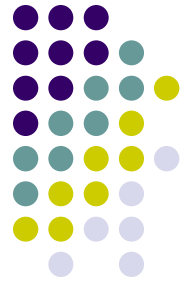
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Indian corruption levels compare favorably with Chinese levels...



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...and with those of countries of comparable economic development



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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!

