

Bihar Relative Performance: A Survey of the Landscape through the Lens of Growth Economics

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“Textbook” Approach to Growth Theory

- Discuss Issues about Convergence (Conditional/Absolute)
- Recent Popularity of Development Accounting (Caselli (2005), Hsieh and Klenow (2010))
 - Factors of Accumulation (Capital, Labor) vs Total Factor Productivity
 - Factor Accumulation may be endogenous to Productivity Differences (and vice versa)
- Sources of Productivity Differences (Inter-sectoral imbalances (why?), Misallocation of resources, financial frictions, institutions, etc.)
- Fundamental Determinants - Geography, History, etc.

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- Plan is to look at some of the stylized facts on Bihar and see how selected theories might be relevant at understanding the issues facing the state.

Bihar: Divergence(or at least Non-Convergence)

Real GDP per Capita				
	1960	1985	1999	2007
Bihar (Undivided)	3296	4220	7211	10161
Bihar (Divided)			5786	8573
India	7121	9709	15881	24295
Richest 5 States	8469	14098	22682	31884
Ratio of India to Bihar(U)	2.16	2.30	2.2	2.39
Ratio of India to Bihar(D)			2.74	2.83
Ratio of Richest 5 to B-U	2.56	3.34	3.14	3.13
Ratio of Richest 5 to B-D			3.92	3.71

Recent literature on Convergence - Purfield (2006)

Dualism in Bihar?

		1961	1985	1993	2007
Share of GDP in Ag. ¹	Bihar	0.52	0.43		0.22
	India	0.43	0.31		0.18
Share of Labor Force in Secondary Employment	Bihar			77	74
	India			75	57
Real Ag GDP/worker(2001)	Bihar				7046
	India				19034
Real Ag GDP/NSA	Bihar	132	211		272 353
	India	125	202		318 379
Land Fragmentation (2005)	Bihar				5 (worst)
	India				3.2

¹Divided Bihar was 30% and India 25% in 1999.

Bihar's Human Capital Problem

		1961	1985	2001	2007
Fertility Rates ²	Bihar	5.6	5		4
	India	5.7	4.2		2.7
Literacy Rates	Bihar	8.3	19.3	33.1	
	India	15.7	33.8	53.7	
Dropout Ratio in Primary School (Grades 1-8)	Bihar			75	
	India			41	

²Estimates for 1961 are for the sixties and are from Bhat (1984). Literacy rates for 2001 refer to Divided Bihar. For Jharkhand the number is 38.

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 - Aggregate productivity (Lagakos and Waugh, 2010)

Dualism in Growth

Dynamic Consequences of Dualism.

- Doepke (2004) : Transition from Agrarian to Industrial Economy with endogenous fertility and education. Policy effects- Educations subsidies are less effective than child labor restrictions. Compares Korea vs Brazil
- Vollrath (2009) : Relative improvements in Agricultural Productivity might lead to higher fertility. Agricultural Revolution might be welfare maximizing but not output maximizing. (but see Rosenzweig and Foster, 2006)
- Galor et al (2003) : Political Economy Issues may lead to lack of financing of human capital

Dualism in Growth

Or is Dualism just a manifestation with productivity differences being key?

- Lagakos and Waugh (2010) - low labor productivity in agriculture is a consequence of subsistence needs and low overall productivity.
- Manuelli and Seshadri (forthcoming QJE): TFP Differences are sufficient to generate international differences in fertility, schooling and life expectancy.
- Herrendorf and Valentyni (forthcoming JEEA): TFP differences are large across food, equipment and construction. Less so for services and manufactured goods.

Dualism in Growth

What are the Sources of Productivity Differences?

- Lack of Land Reforms? → Burgess & Besley(2000)
- Labor Market Regulations? → Burgess & Besley(2004), Gupta et al(2008)
- Product Market Regulations? → Conway & Herd (2008)
- Credit Market Imperfections? → Buera and Shin (2008)

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- Credit Market Imperfections: One can look at financial development variables. Bank Branches per 10^3 : India-8, Bihar-4. More endogenous than the rest...

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- More seriously: recent contributions to growth theory can be very useful evaluating the *relative quantitative importance* of competing sources of productivity differences in explaining Bihar's performance.