

International Workshop on, “Strategies to Achieve Pro-poor Growth
in Brazil, China, India and Europe: The Case of Education Sector”

Pro-poor Growth in India: Where Does the Country Stand?

Arindam Banik, Ph.D.
Professor

International Management Institute
B10, Qutab Institutional Area
New Delhi-110016.INDIA
Email: banik.arindam@gmail.com

InWEnt's International Conference Centre, Berlin
10-11, December, 2009

Pro-Poor Policy Defined

Pro-poor policy aims to target those who are most disadvantaged, in income, opportunity or hardship

Pro-poor policies will lead to:

- An increase in the income levels of the poor faster than the average rate of growth in income as a whole
- A reduction in recorded poverty levels: MDG 1 and national poverty lines
- An improvement in other MDG indicators, and
- An improvement in the HDI and HPI indicators

MDG Reports suggest that growth has NOT been pro-poor - or at least not sufficiently pro-poor to be making a real impact on poverty and MDGs

Stylized Facts

Policy may be pro-poor when:

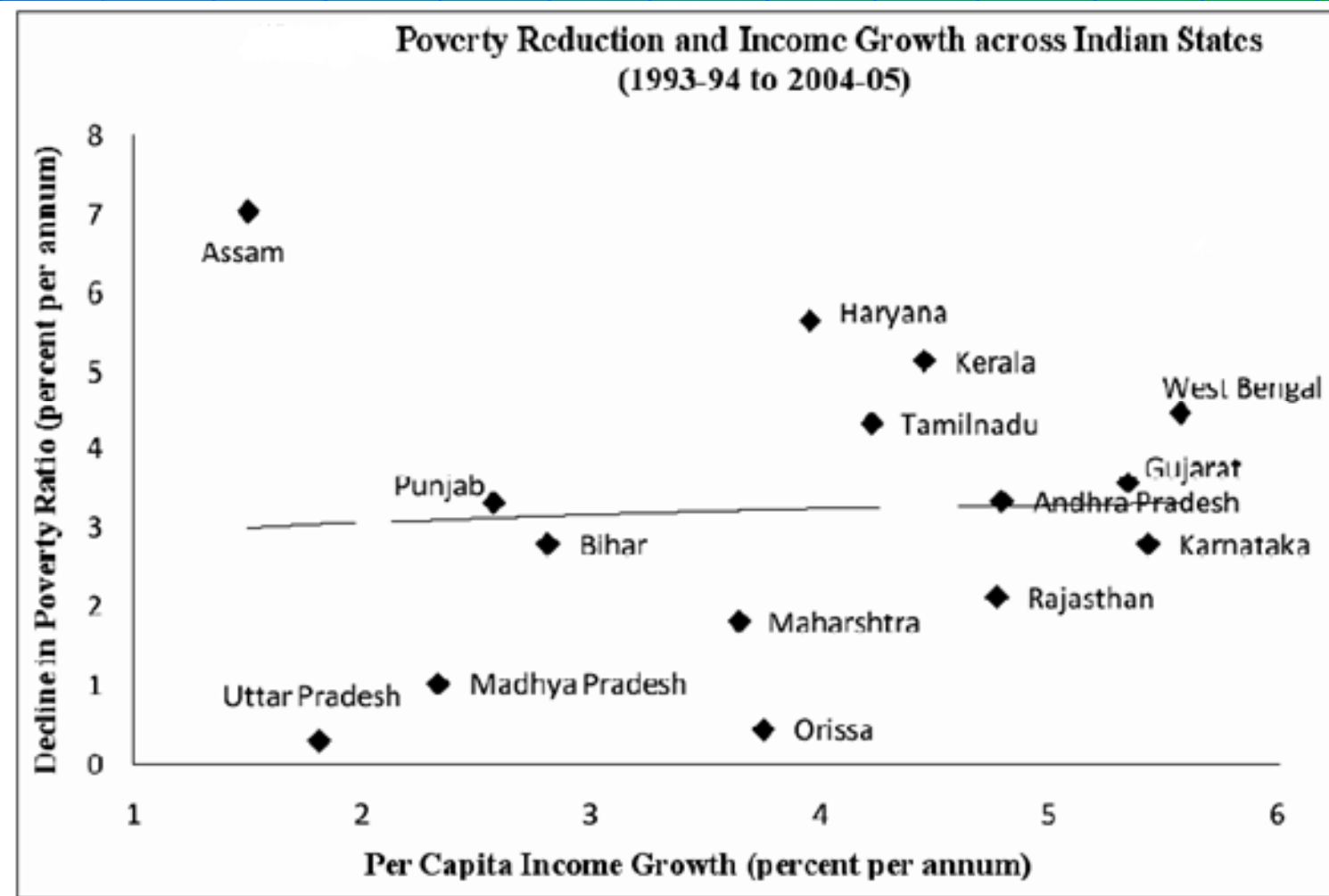
- It is labour rather than capital intensive
- Targets sectors in which the poor are employed or engaged
 - Rural: agriculture and fisheries (rural)
 - Urban: labour intensive sectors including construction, services
- It creates income and employment for the poor and disadvantaged:
 - Youth and other unemployed (low-skilled)
 - Women
 - Other disadvantaged groups (elderly, disabled, displaced people, rural/urban migrants)
- Targeted at individual disadvantaged and poor groups
- Serves to reduce inequality

Growth is a necessary but not sufficient condition for poverty reduction

Growth and MDGs: A Two-way Causality

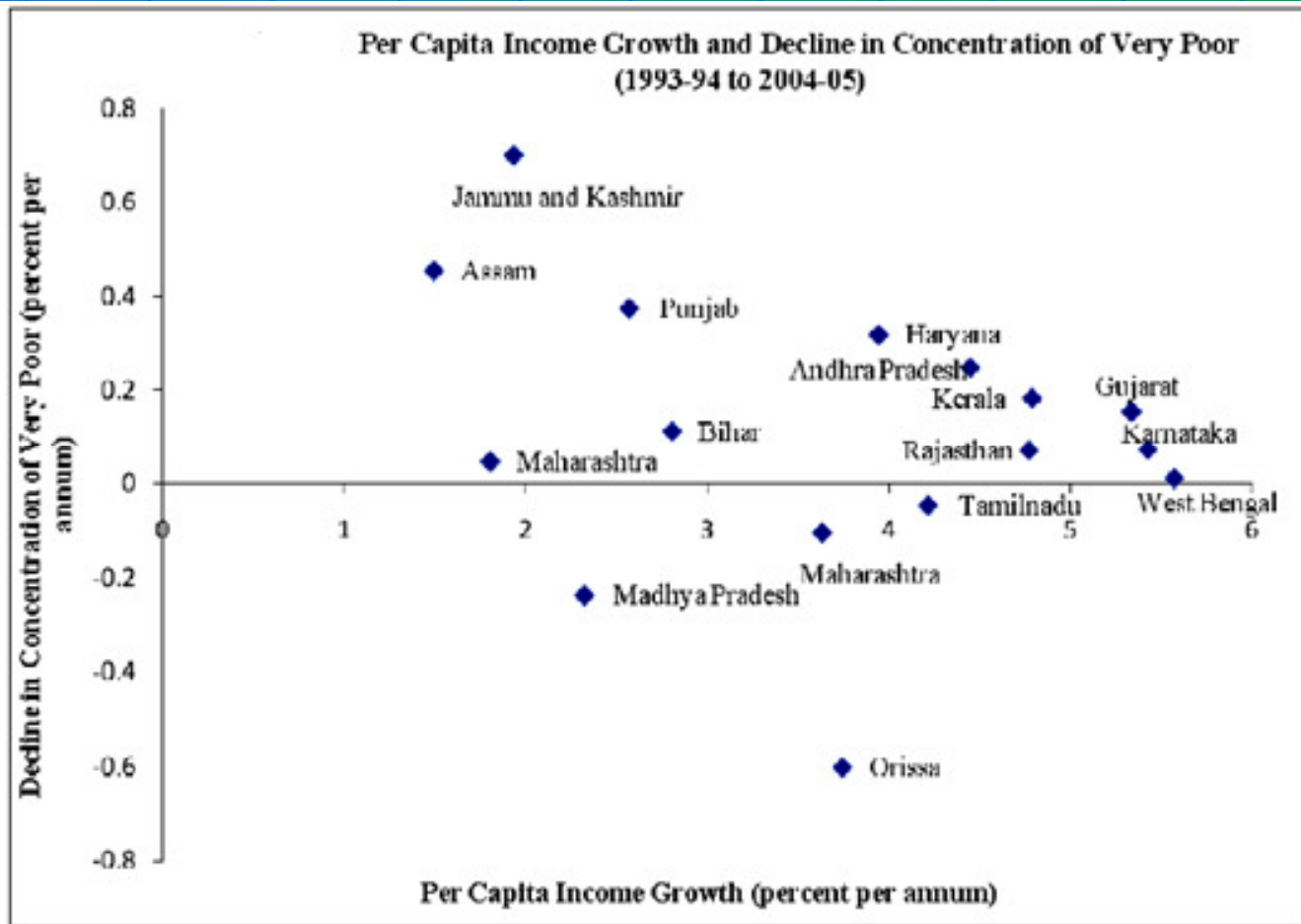
- Growth leads to Human development and poverty reduction
 - Human development and poverty reduction leads to Growth
- MDGs are an end in themselves but also a means to achieving high quality, sustainable growth

An Indian Case Study



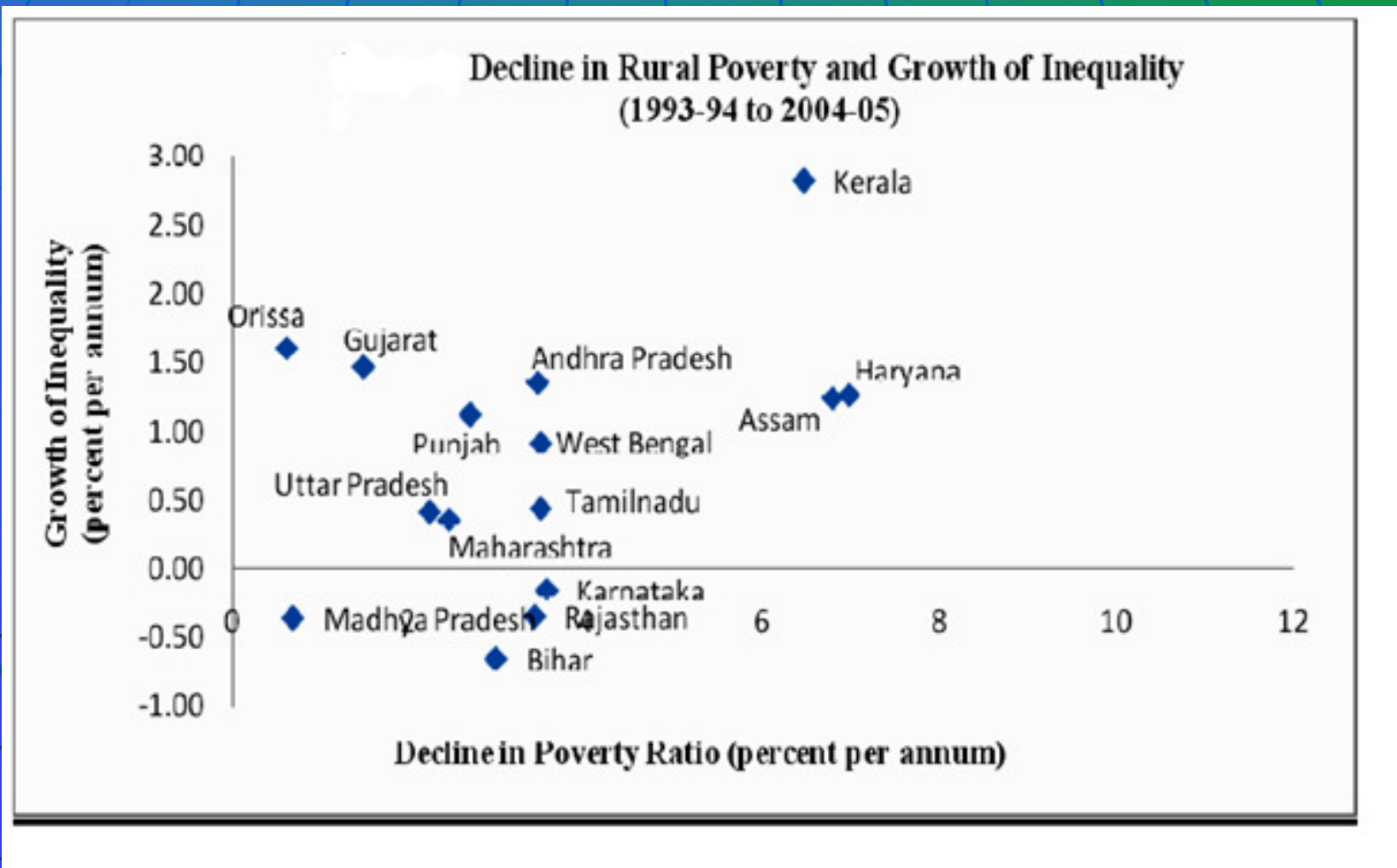
Source: For both Figure 1 and Figure 2, Poverty Ratio is based on Planning Commission (2002) and Planning Commission (2007) and CSO for Per Capita Income (Per Capita NSDP) Growth.

An Indian Case Study (contd.)



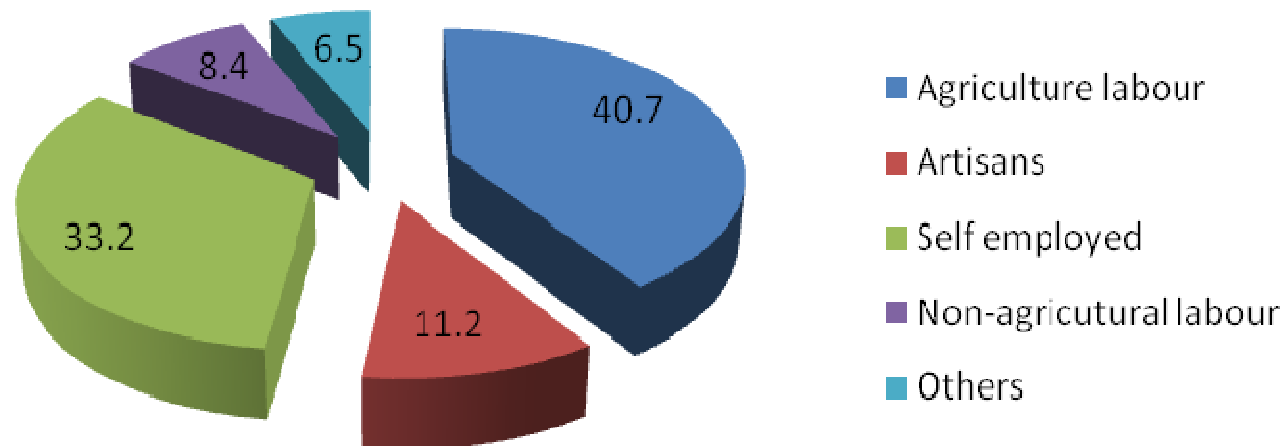
Source: Concentration of very poor computed on the basis of unit level record for 49th and 55th Round, and Report No. 508 on Consumption Expenditure containing grouped data for the 61st Round. Bihar, MP and UP refer to undivided states. The data on Per Capita Income (Per Capita NSDP) Growth have been obtained from CSO.

An Indian Case Study (contd.)



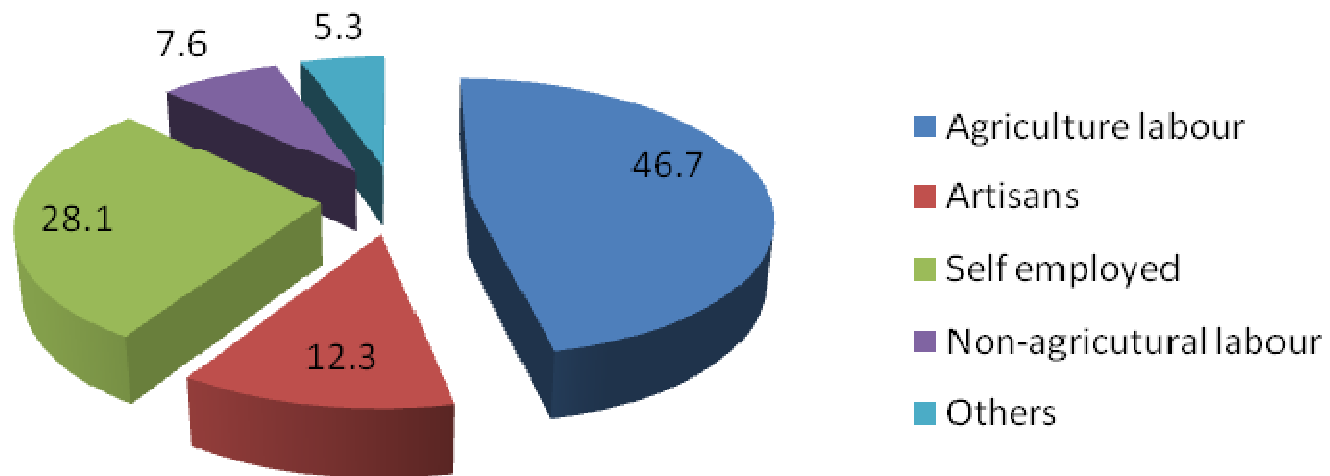
Who are the Poor in India?

**Percentage Distribution of
Rural Poor by Occupation (1993-94)**



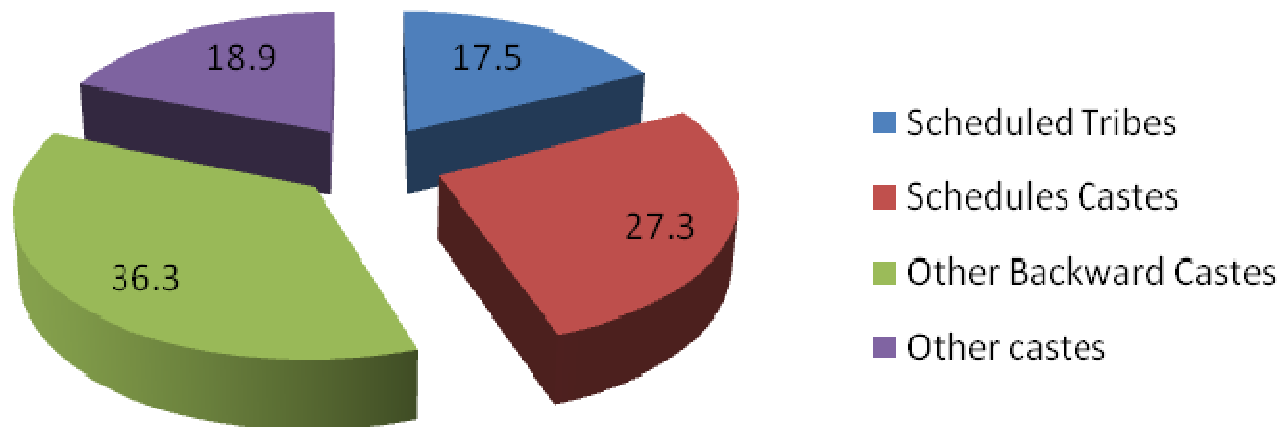
Who are the Poor in India? (contd.)

**Percentage Distribution of
Rural Poor by Occupation (1999-
2000)**

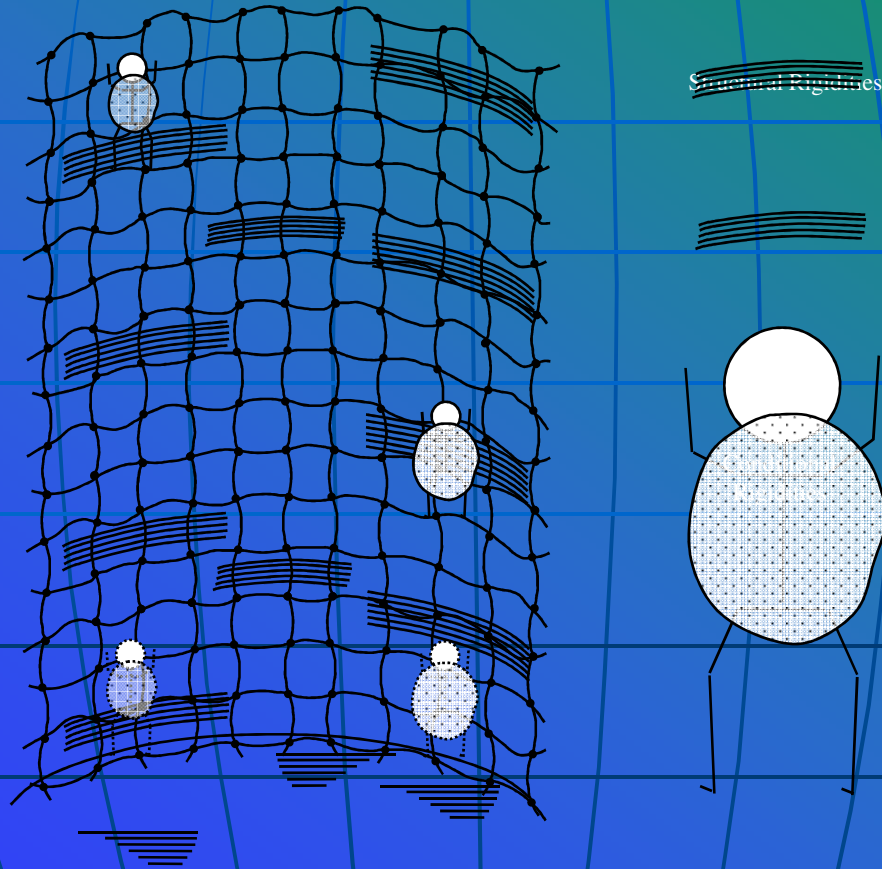


Poverty Dimension

**Percentage Distribution of
Rural Poor by Social Class (1999-2000)**



A Diagrammatic Representation of Conditional and Structural Rigidities



Grouping of States According to Literacy Rates

YEAR	Less than national average (34.45%):	More than national average (34.45%):
1971	Andhra Pradesh, Assam, Bihar, Haryana, Punjab, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh	Karnataka, Kerala, Gujarat, Maharashtra, Tamil Nadu, West Bengal
	Less than national average 64.84	more than national average 64.84
2001	Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh, Orissa	Karnataka, Kerala, Gujarat, Maharashtra, Tamil Nadu, West Bengal, Haryana, Punjab

The Facts

In the East Asian context, for example, it is the egalitarian education policies which have played a pivotal role in their economic growth .

It is further argued that the increased equality has led to enhanced political and social stability, thereby creating a better investment environment.

The cognitive skills, in addition to increasing the literacy rate, may be considered as a precondition for economic development.

The Facts

The lack of complementary factors such as non-availability of skilled labour further added to the problem of capital flow to the capital-poor countries.

Two aspects of quality of education and skills. In some countries, schooling has been enormously effective in transmitting knowledge and skills, while in others it has been essentially worthless and has created no skills.

The Idea

There has been a dearth of empirical literature in the Indian context analyzing the diverse pictures that relate the transformation from manufacturing to knowledge economy across Indian states.

This is important in the Indian context due to the fact that the country is benefiting due to positive contribution made by a select group of states and their education system.

Possible Interactions Between Education and Development

The literature offers several arguments predictive of an interactive effect between education and development.

These arguments can be organised with reference to the level of development reached by a given economy. The first argument pertains to the efficiency of the educational system.

Some writers imply that the efficiency of the educational system may depend on the number of human capital that is available in a given economy. Hence, the demand for education rises with the level attained.

Possible Interactions Between Education and Development (contd.)

The second argument focuses on the financial constraints facing poor economies.

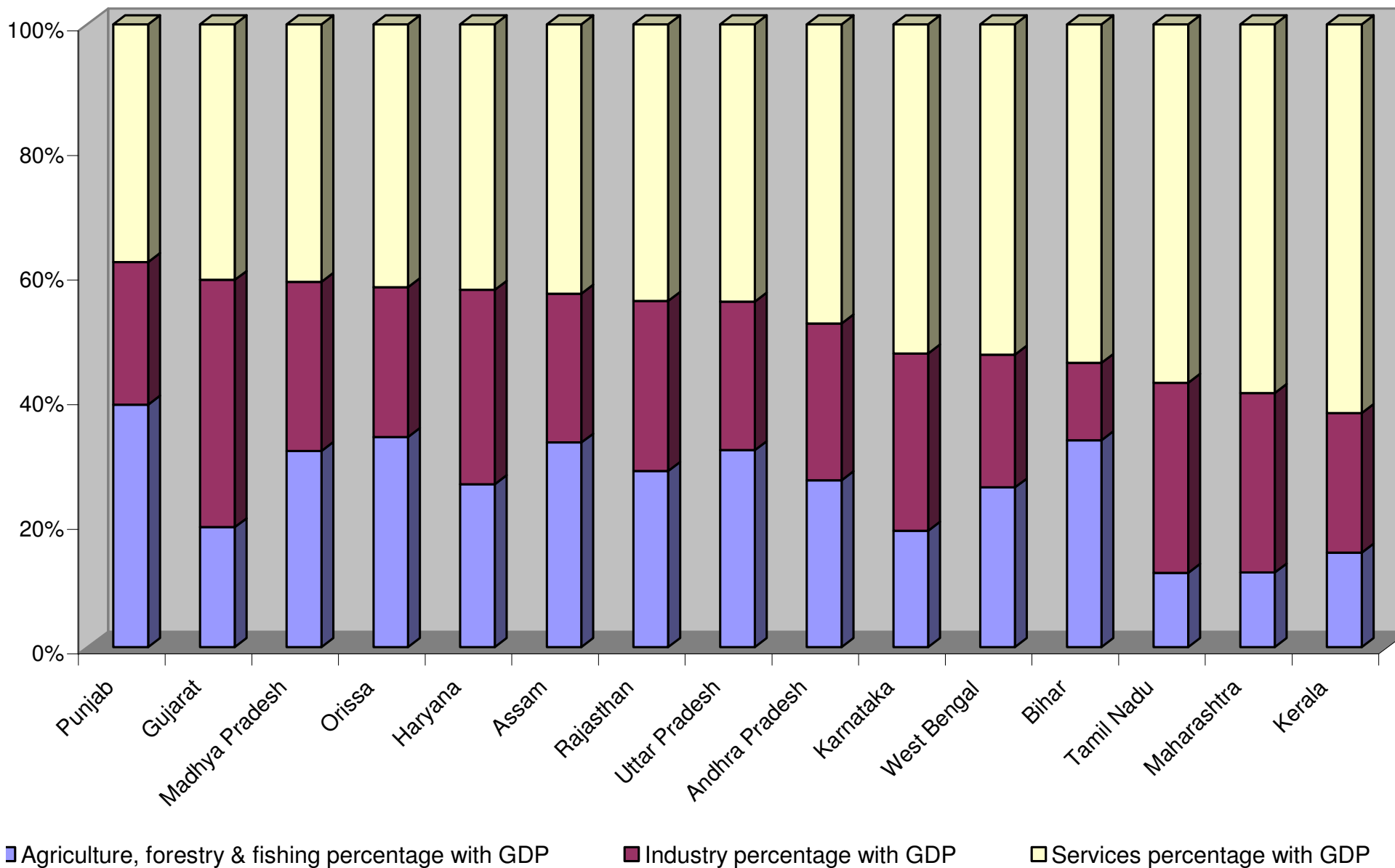
It is argued that the poorer the economy, the smaller the amount of expenditure on education .

Interestingly, the second argument points to the fact that a low level of human capital and growth are thus mutually reinforcing a situation where an economy gets stuck in a poverty trap or driven towards sustained growth



Structure of Indian Economy: The States' Scenario

Figure 1
Structure of the Economy (Tertiary contribution-wise)



Income per capita – divergent view: Indian States (Rising Disparities)

Coefficient of Variation (CV) of Per Capita Income

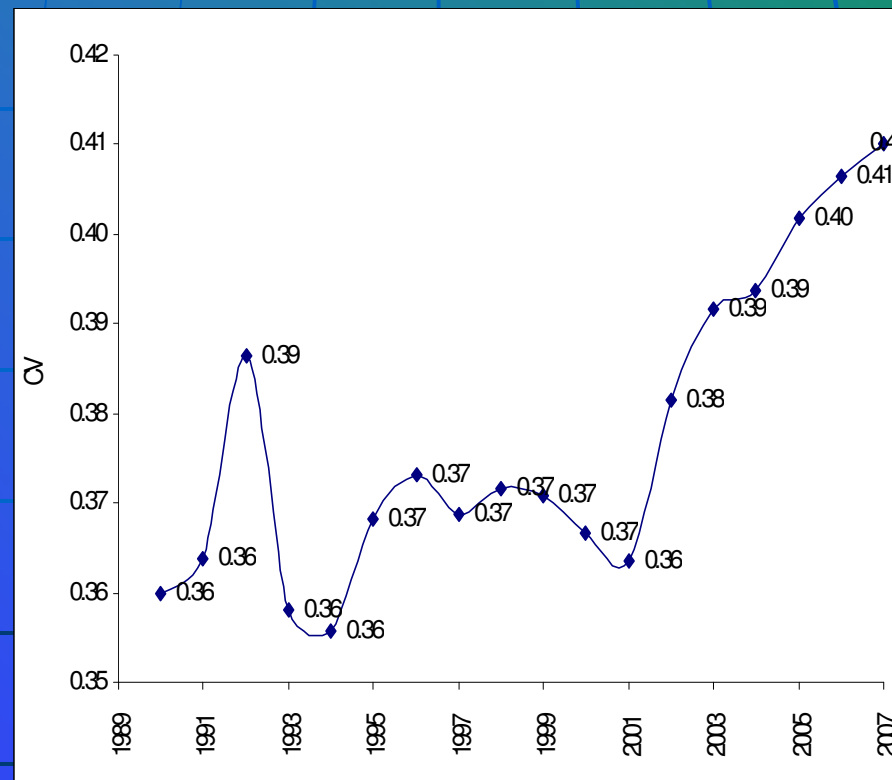


Figure 2
Structure of the Economy (Secondary contribution-wise)

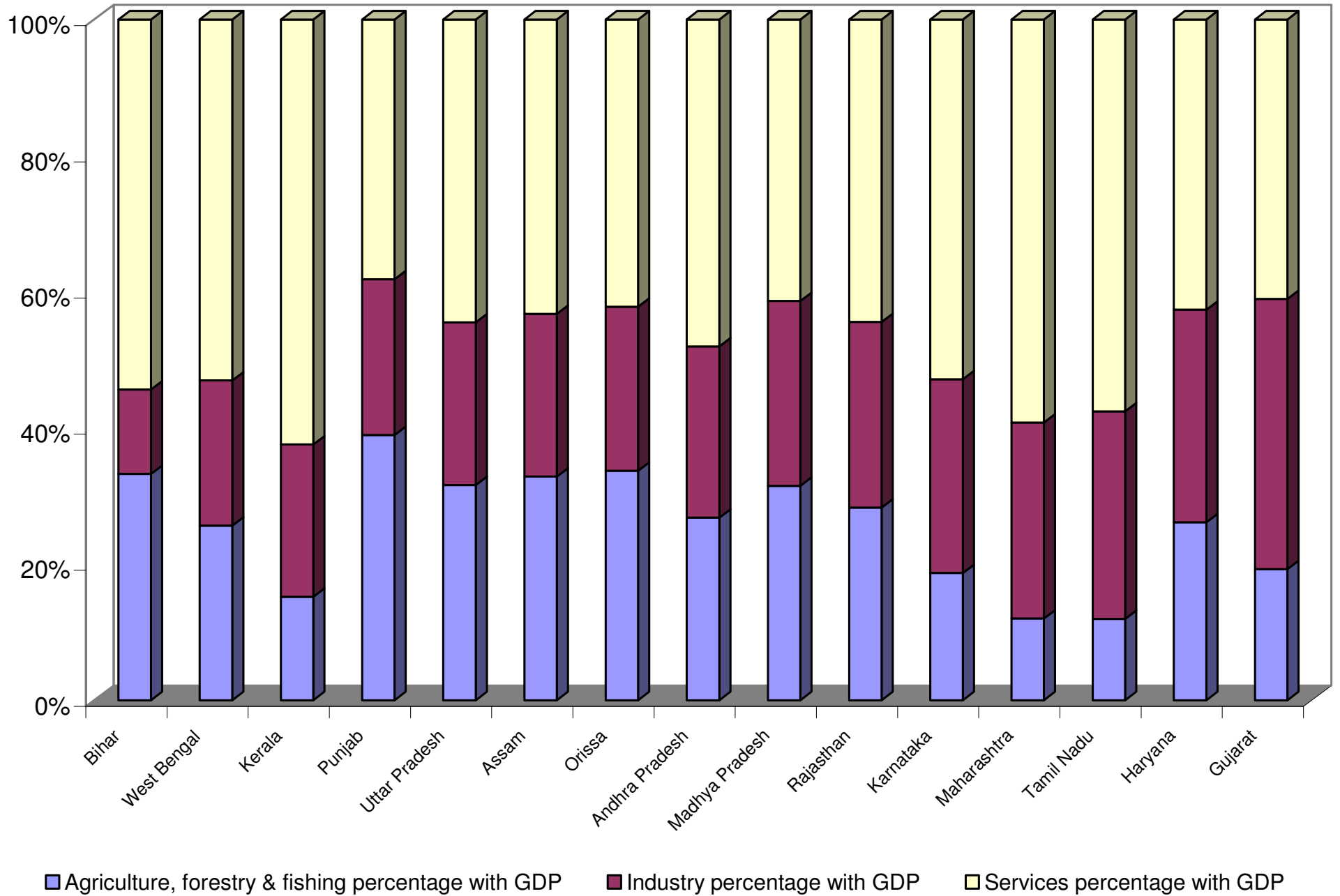


Figure 3
Structure of the Economy (Primary contribution-wise)

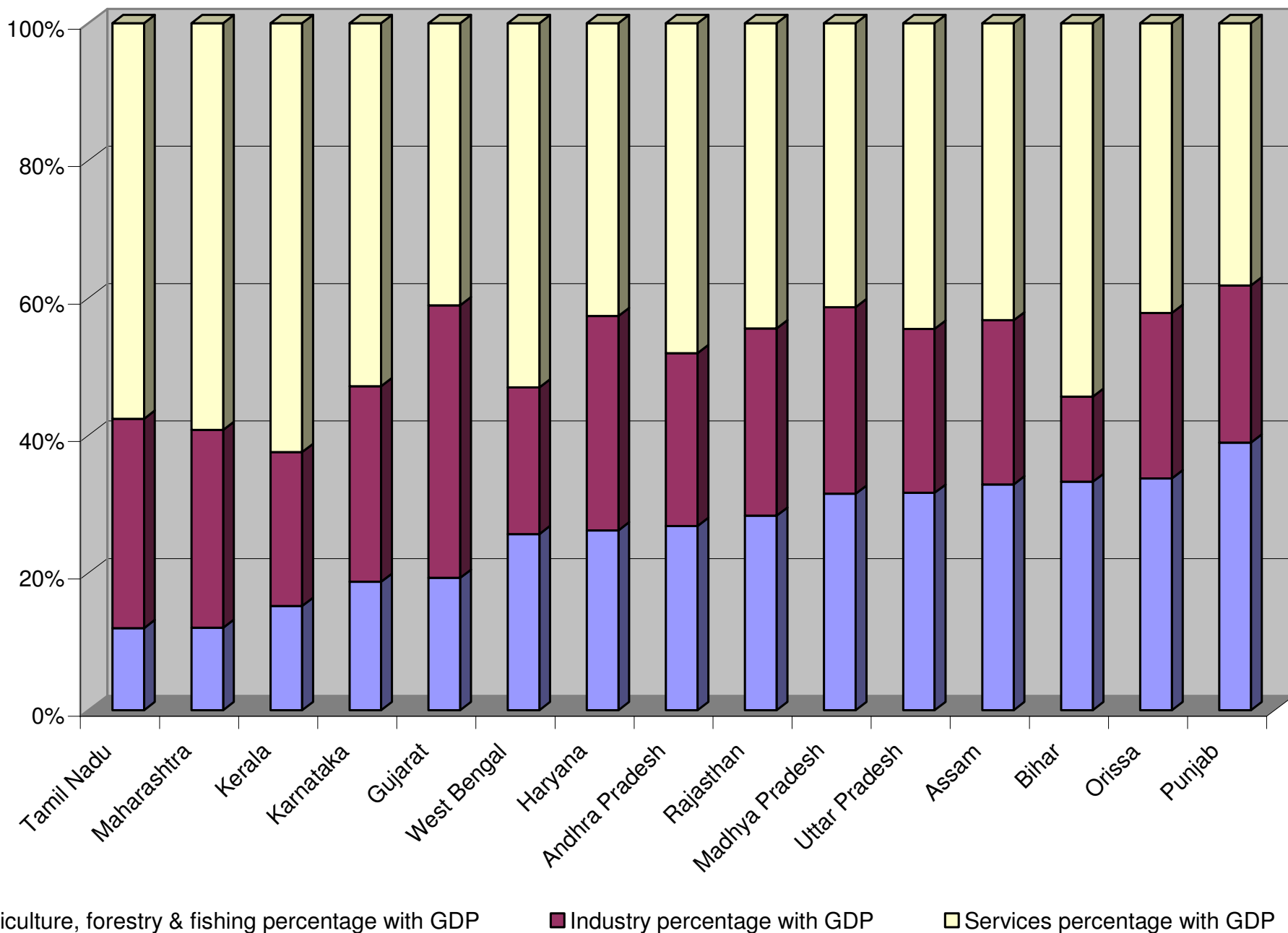


Figure 4
New Services vs GDP

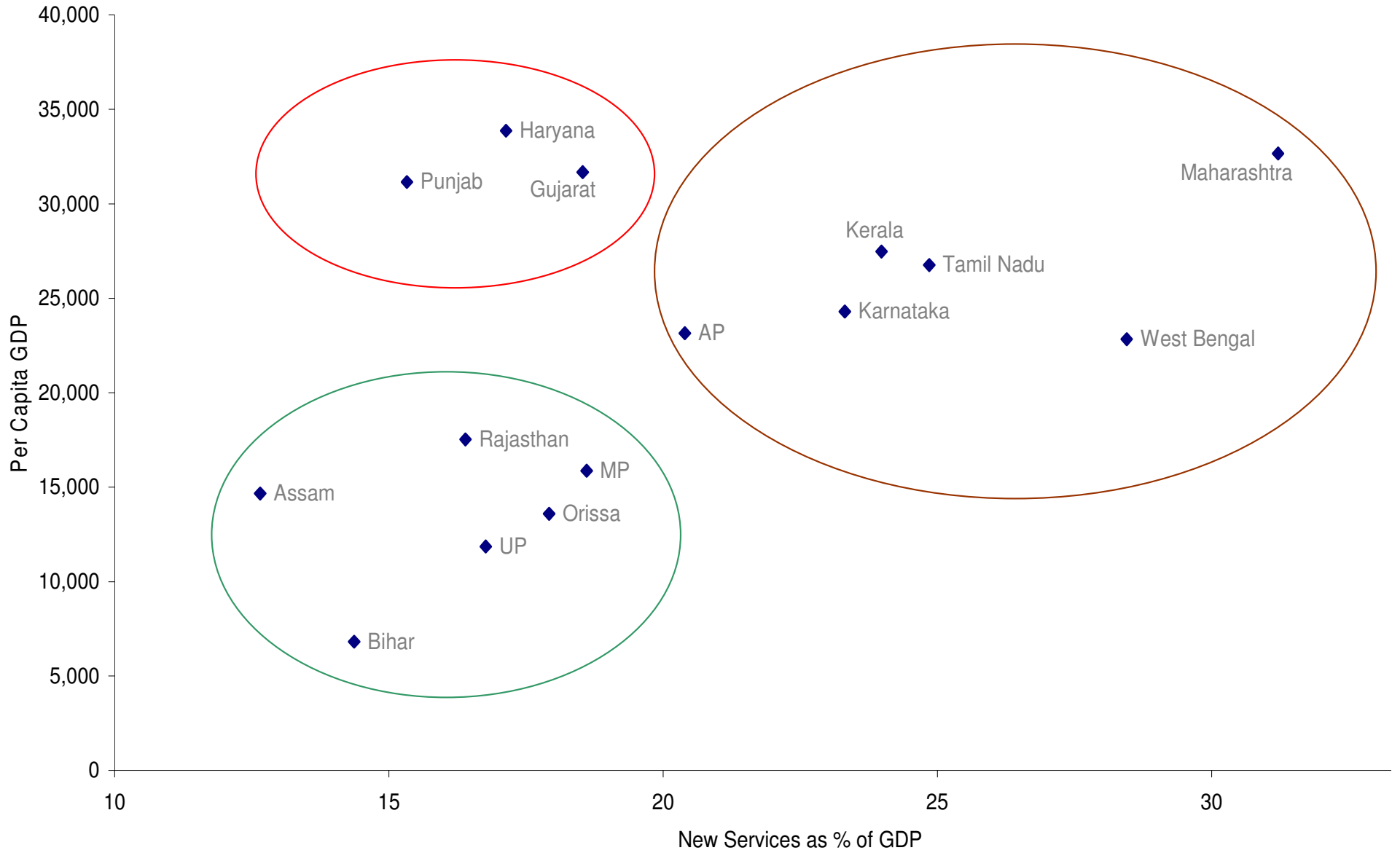


Figure 5 New Services vs All Services

(Size of Bubble Represents Per Capita GDP)

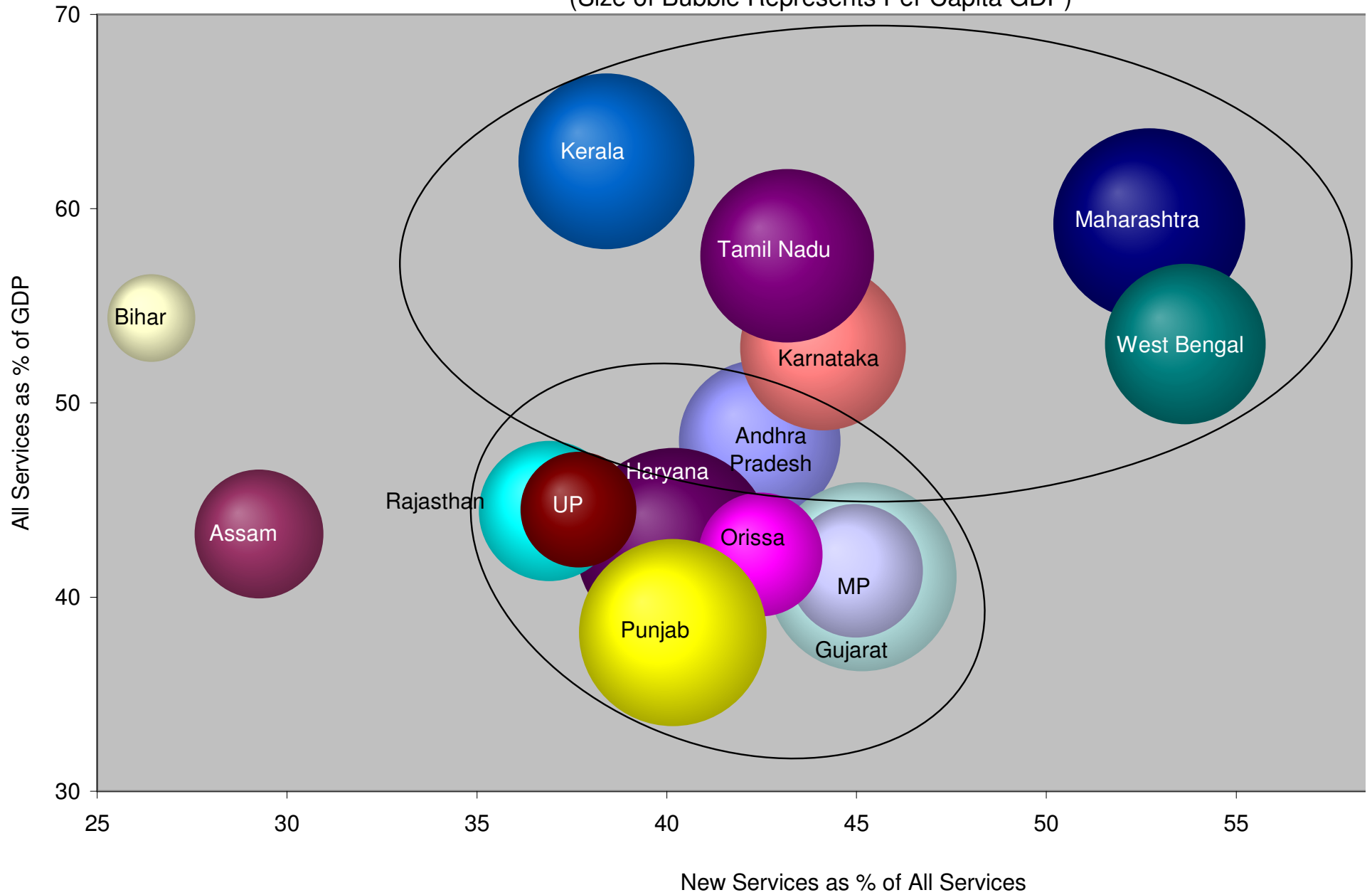


Figure 6
Mfg and New Services

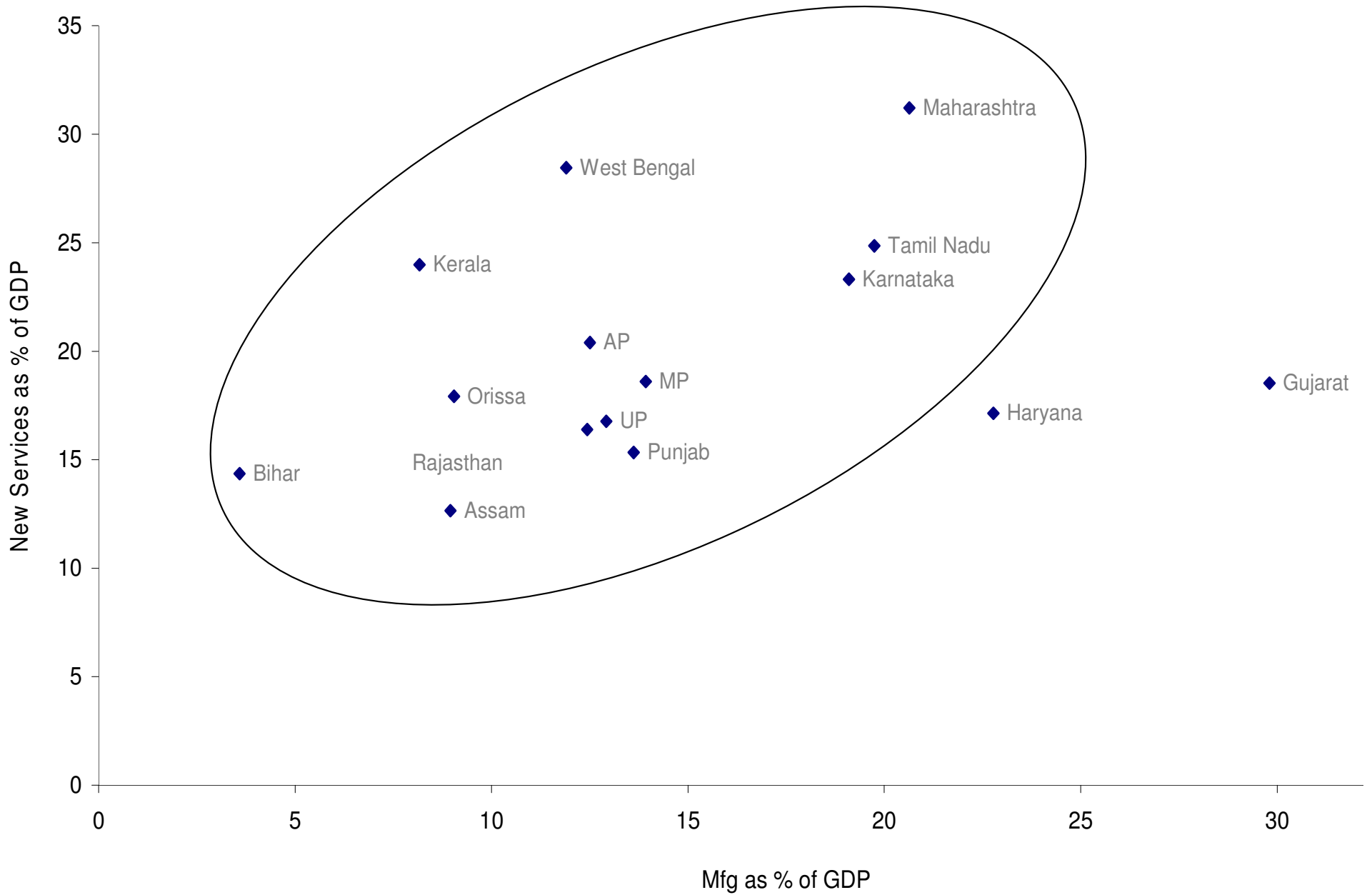


Figure 7
Per Capita NSDP vs Literacy Rate

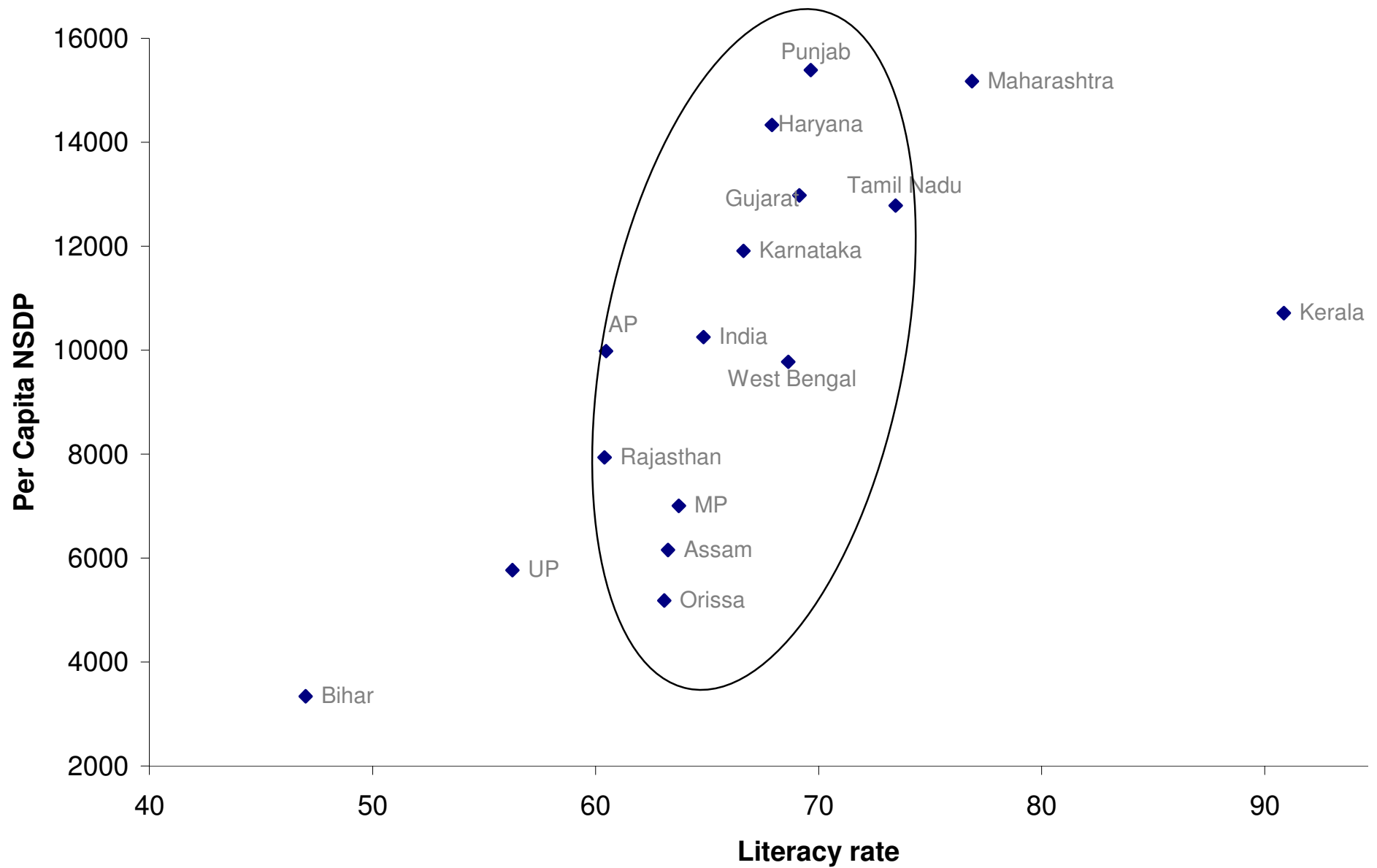


Figure 8
Per Capita NSDP vs %BPL

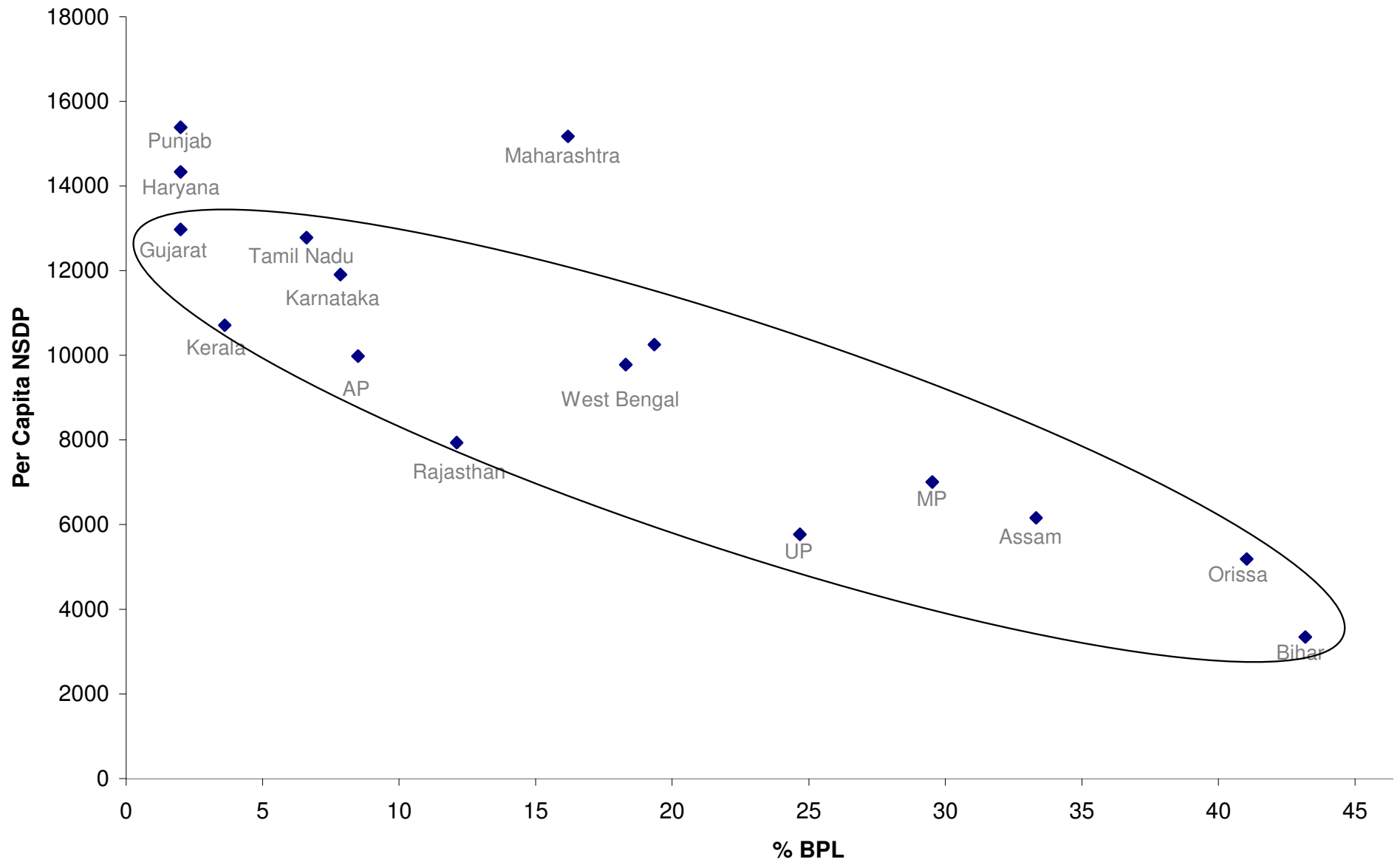


Figure 9
Services and Edu Instts (Per Capita)

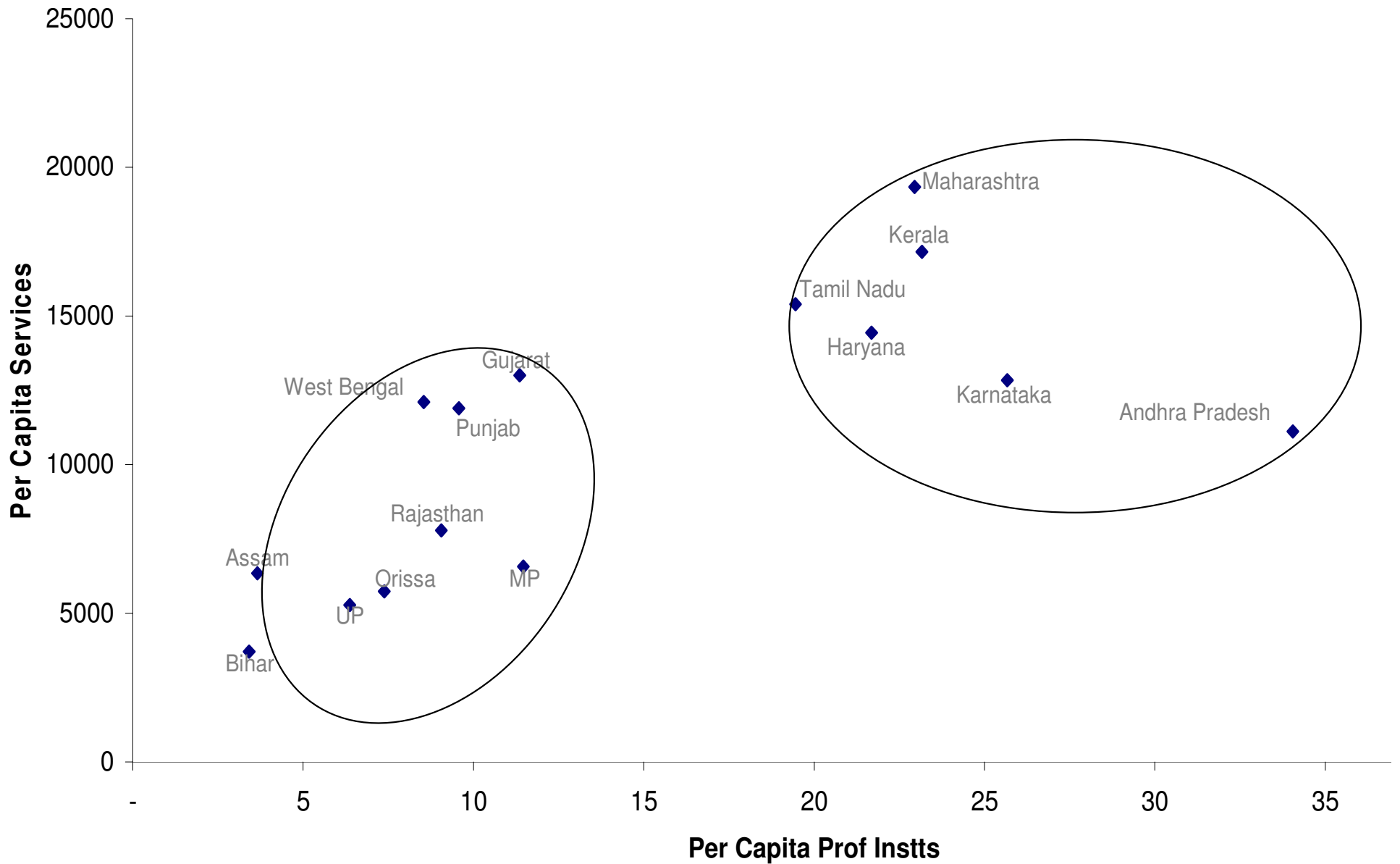
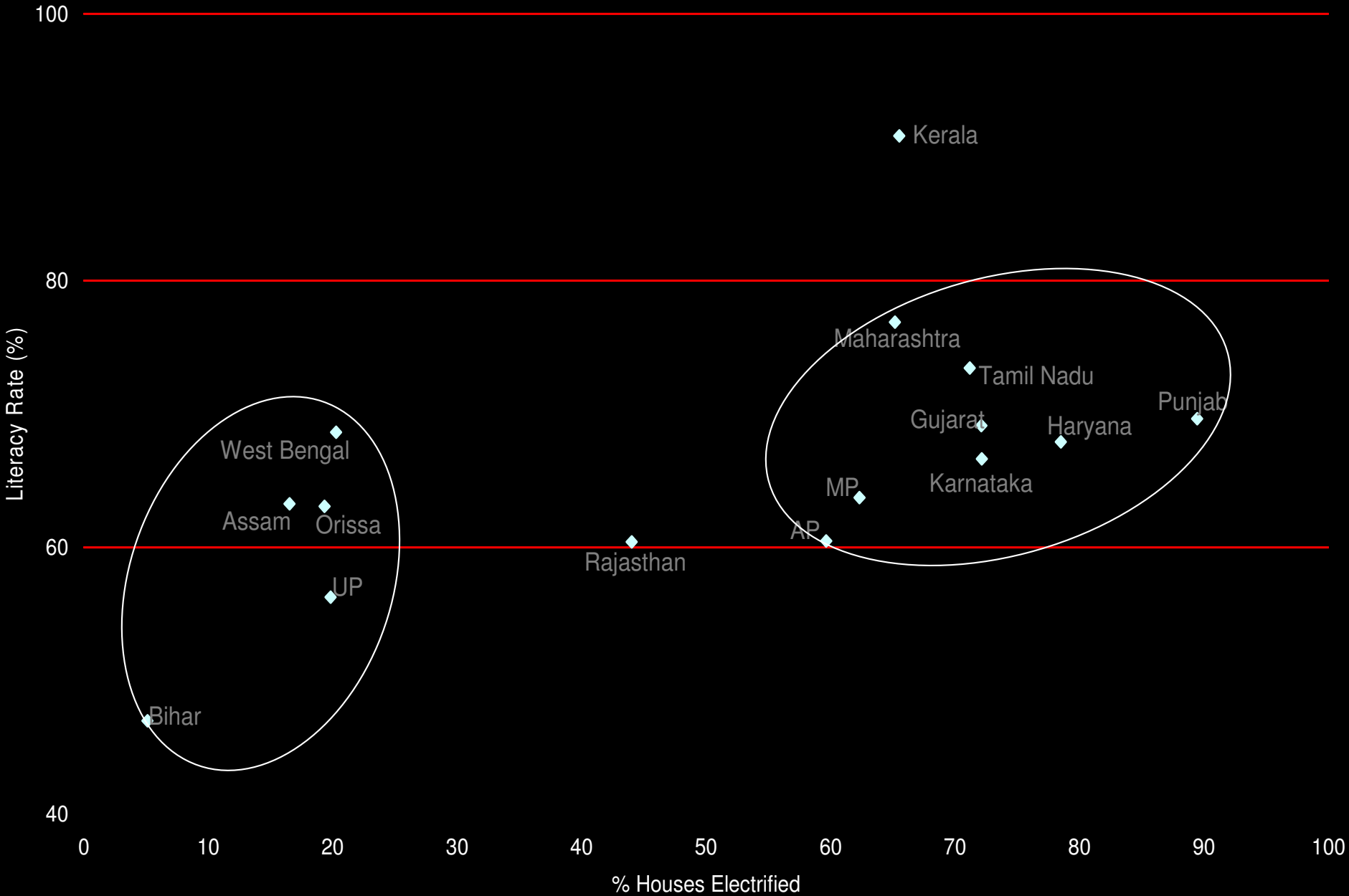


Figure 10
Electrification vs Literacy



Empirical Results

Table 1 presents the results of unit root tests obtained using the augmented Dickey-Fuller test. The evidence does overwhelmingly support the presence of unit roots (in terms of levels) in all the series for all countries.

This is confirmed by the fact that the null hypothesis that the series (in levels) are non-stationary is rejected in every instance, under different assumptions.

Clearly, for all cases, both series appear to be I (I) since the null hypothesis of a unit root in the first difference is rejected in favor of the alternative hypothesis that the series, in first difference, are stationary.

Table 1: Augmented Dickey-Fuller Unit Root Test

<i>Intercept</i>				
<i>Country</i>	<i>EDUE</i>	<i>DEDUE</i>	<i>GROWTH</i>	<i>DGROWTH</i>
Andhra Pradesh	0.53158*-	-3.8315*-	0.7367*	-3.7379*
Haryana	3.7379	-2.6798*	-3.7379*	-3.105***
<i>Trend and Intercept</i>				
<i>Country</i>	<i>EDUE</i>	<i>DEDUE</i>	<i>GROWTH</i>	<i>DGROWTH</i>
Andhra Pradesh	-4.5326*	-1.5326*	-4.5326**	-3.1834*
Haryana	-4.3943*	-2.130***	-4.3943	-4.7865***

Notes:

D in front the variables indicates first difference.

EDU: Education; DEV: Development

*, ** and *** denote statistical significance at the 1%, 5% and 10% levels respectively.

Source: For critical values, see MacKinnon (1991).

Contd.

Given these results, the next step involves applying Engle-Granger two-step co-integration procedure to determine whether GROWTH and EDE are co-integrated for all of the states. The optimum lag lengths are determined using the Akaike final prediction error (FPE) criterion.

The results of the ADF test applied to the residuals of the co integration equations are presented in Table 2. Together with the results, the values of the slope coefficients and Co integration Regression Durbin Watson (CROW) statistics are also presented.

Contd.

Based on the ADF test, the results presented in Table 2 suggest evidence of co-integration between GROWTH and EDE in all States. This finding is confirmed by the CRDW statistic. These results necessitate a long run relationship between education and development in all of the states.

Furthermore, since the two variables are co-integrated in all states, a Vector Error Correction Model (VECM) is estimated to determine the nature of causality between GROWTH and EDE.

Table 2: Results of Engle-Granger Cointegration Test

<i>Country</i>	<i>Conintegration Equation</i>	<i>Slope</i>	<i>CRDW</i>	<i>Calculate d ADF for residuals</i>
Andhra Pradesh	DEV = f (EDU)	0.0310*	1.7257*	-
	EDU = f (DEV)	1.52281*	1.950**	4.204*
Haryana	DEV = f (EDU)	0.033*	1.328*	-
	EDU = f (DEV)	2.439*	1.102	3.226*
				-2.616

Notes:

*, ** and *** denote statistical significance at the 1%, 5% and 10% levels respectively.

Critical values at the 1%, 5%, and 10% levels are -2.637, -1.951, and -1.611, respectively.

Source: For critical values, see MacKinnon (1991) and Engle and Yoo (1987).

Contd.

Furthermore, since the two variables are co-integrated in all states, a Vector Error Correction Model (VECM) is estimated to determine the nature of causality between GROWTH and EDE.

The VECM is represented by equations (2) and (3). The error-correction terms $\delta t-j$ and $pt-j$ represent the long run impact of one variable on the other, while the changes of the lagged independent variable describe the short run causal impact.

Contd.

The empirical results of the estimated VECM are presented in Table 3. Table 3 indicates a mixed set of outcomes.

In both the short and long run, the evidence suggests that education expenditure is driving growth and development in Kerala, Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra.

However, development causes expenditure on education in other states considered for the study. These results provide some evidence of bi-directional causality in the short in these states

Table 3: Results of Vector Error Correction Model

Vector Error Correction Model (VECM)				
	Does EDU cause DEV?		Does DEV cause EDU?	
Country	<i>t</i>-Statistic for ecm_{t-1}	<i>F</i>-Statistic for EDU	<i>t</i>-Statistic for ecm_{t-1}	<i>F</i>-Statistic for DEV
Andhra Pradesh	0.79299	4.168487*	-0.555367*	4.571634**
Haryana	0.051428	1.284721	-0.9333**	13.64055** *

Notes:

Ecm_{t-1} denotes the error-correction term

*, **, and ** denote statistical significance at the 1%, 5% and 10% levels respectively.

The F-Statistics are computed to test whether the variables are jointly insignificant.

Source: For critical values, see Gujarati (1995).

Implications

I have applied co-integration and vector error-correction models to analyze the causal relationship between education expenditure and development/growth in select Indian States using data from 1980/81 to 2004/5.

Expenditure on education per capita was used as the proxy for education, while state domestic product per capita was the proxy for development.

The empirical results show that in both the short and long run, the evidence suggests that per capita education expenditure is driving growth and thus development in five states

Conclusion and Policy Implications (Contd.)

However, growth and development causes per capita education expenditures in other states in the short run.. These results provide some evidence of bi-directional causality in the short run .

This finding is rather interesting because it contradicts most of the theoretical expectations. Furthermore, this finding is probably reflecting some shortcomings in the available data.

Conclusion and Policy Implications

(Contd.)

Nonetheless, the empirical results for five southern states have four policy implications. First, the empirical results seem to be suggesting that states with higher per capita education expenditures are now reaping the benefit revealed in their growth. This finding seems interesting for the other states of India .

Second, improving the level of education appears to have failed to stimulate development in these some states, a finding that is" possibly reflecting the belief that the educational systems in the some states have not been adequately developed and tailored towards the implementation of curriculums along the lines of technical and scientific subjects needed for industrial growth and development (Banik and Iyare 2003).

Conclusion and Policy Implications

(Contd.)

Third, to a large extent, these states either failed to provide conducive environments for boosting production, or promoted atmospheres for production that fell far behind those in other states that are considered an ideal destination of foreign investment. Fourth, the current level of unemployment rates in other states suggest that improvements in the quality and level of education has not been focused on allowing labour to take advantage of the opportunities offered by technological progress.



THANK YOU