Operationalizing Pro-Poor Growth

April 02, 2009

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Economic Growth

$$Y(t) = A(t)\, K(t)^{\alpha} H(t)^{\beta} L(t)^{1-\alpha-\beta}.$$

where $A(t)$ = technology; $K(t)$ = capital; $H(t)$ = human capital; $L(t)$ = labour.

this summarises the complicated process of interactions among economic actors in the economy.

important – "Is there some action a government of India could take that would lead the Indian economy to grow like Indonesia's of Egypt's? If so, what exactly? If not, what is it about the "nature of India" that makes it so? The consequences for human welfare involved in questions like these are simply staggering: Once starts to think about them, it is hard to think about anything else" (Robert E. Lucas)

GDP per capita (constant 1995 USD)	1960	1980	2000	Growth *
East Asia & Pacific	150	297	948	4.8%
OECD	9,944	19,666	29,888	2.7%
Latin America & Caribbean	1,985	3,525	3,811	1.4%
Middle East & North Africa	..	2,072	2,050	0.2%
South Asia	186	240	460	2.4%
Sub-Saharan Africa	477	660	567	0.5%

* Average annual growth rate 1960-2003 (1975-2000 for ME&NA)

Source: World Development Indicators

- the aggregate production function suggests that sources of income differences across countries are due to:
  - capital stocks – includes public capital.
  - human capital stocks
  - technology differences
- next to impossible to measure stocks accurately, but national accounts try to do so.

What is $A(t)$?

- while we refer to this as technology, it is in reduced form representative of everything that we think leads to differences between economies that cannot be explained by differences in stocks.
  - efficiency of resource allocation
  - institutions
  - government
- since technology is the least well measured – it is often treated as the residual component in growth.

India versus USA (1990)

- Income per capita: USA: 26470; India 1675 $\longrightarrow$ ratio of 15.8
- Years of Schooling: USA: 12; India 3.68 $\longrightarrow$ ratio of 3.26
- Capital per worker: USA: 4570 bn; India with 685: ratio of 6.7

Poverty

- Major issue.

- There are many ways of measuring this. One of the most common is to study the proportion of the population with incomes below a particular poverty line z

- The MDGs are based on a \$1 day poverty line:halve the proportion of people living below a dollar a day from around 30% of the developing world's population in 1990 to 15% by 2015

$$P = \frac{\#\left(i : y_i \leq z\right)}{\text{total population}}.$$

Where are the Poor

- see Table 1 from Besley and Burgess (2003)
- main concentrations of the poor are in Sub-Saharan Africa, East Asia and South Asia
- 1990-1998 poverty rate in East Asia drops from 27.58% to 15.32% and numbers in poverty fall from 452 to 278 million
- corresponds to 44% and 38% reductions respectively $\rightarrow$ China accounts for the bulk of these changes

- these figures are startling – over eight years the region has come close to halving the proportion in poverty – region is on course to achieving the Millennium poverty reduction targets fifteen or so years ahead of schedule

- they represent the largest fall in poverty ever witnessed in history and have led to reference to a 'miracle' taking place in East Asia.

- sub-Saharan Africa completely different $\longrightarrow$ poverty rates have remained stagnant, moving from 47.67% in 1990 to 46.30% in 1998, and numbers in poverty have increased from 242 to 291 million corresponding to roughly 50 million entering poverty

- there is thus no sense in which sub-Saharan Africa is on route to achieving the Millennium Poverty Reduction Goals – if anything it is threatening to go in the opposite direction

- this African tragedy contrasts with the East Asian miracle

- South Asia situation is intermediate between East Asia and sub-Saharan Africa $\longrightarrow$ though poverty rates dropped from 44.01% to 39.99% numbers in poverty increased from 495 million to 522 million between 1990 and 1998

- share of the worlds poor in South Asia and sub-Saharan Africa and has thus increased from 57% to 67% between 1990 and 1998 whereas the East Asian share has declined from 35% to 23%

- based on this evidence, South Asia which has the largest concentration of poor people, cannot be deemed to be "on track" in terms of halving the proportion in poverty by 2015

- Table 1 $\longrightarrow$ poverty varies strongly over space and time $\longrightarrow$ suggests that the factors which affect poverty are also time and space varying. This pattern is difficult to square with some fixed effect argument whether this has to do with resource endowments, disease burden, geography or societal norms.

- Political and social factors are clearly at work. And these institutional factors affect not only affect the rate of capital accumulation but also the willingness and power to redistribute towards the poor. Divergent trends in, for example, East Asia and sub-Saharan Africa, are a function of the policy and institutional reforms implemented in the countries that make up those regions.

- Role of modern economics is precisely to identify policy and institutional reforms that are capable of attacking poverty.

- Or put differently, as the argument cuts both ways, we want to identify policy and institutional choices that keep countries or regions poor. Backwardness and poverty are not facts of life. There is real scope to confront them and over reasonable time periods.

- Period of huge potential

Table 1: Poverty Around the World

Population Living Below $1.08 a day (1993 purchasing power parity)										
	Poverty rate (% below $1.08)					**Number of poor (1,000,000)**				
	1987	**1990**	**1993**	**1996**	**1998**	**1987**	**1990**	**1993**	**1996**	**1998**
East Asia &	26.60	27.58	25.24	14.93	15.32	415.13	452.45	431.91	265.13	278.32
(exclude China)	22.91	15.04	12.37	8.05	9.61	109.22	75.99	65.96	45.17	55.59
East Europe & Central Asia	0.24	1.56	3.95	5.12	5.14	1.07	7.14	18.26	23.82	23.98
Latin America	15.33	16.80	15.31	15.63	15.57	63.66	73.76	70.79	75.99	78.16
Middle East & North Africa	11.53	9.28	8.41	7.81	7.32	24.99	21.99	21.54	21.35	20.85
South Asia	44.94	44.01	42.39	42.26	39.99	474.41	495.11	505.08	531.65	522.00
sub-Saharan Africa	46.61	47.67	49.68	48.53	46.30	217.22	242.31	273.29	288.97	290.87
Total	28.69	29.32	28.50	24.86	24.27	1196.48	1292.74	1320.88	1206.92	1214.18
Total (exclude China)	29.56	29.34	28.47	28.15	27.30	890.57	916.29	954.92	986.95	991

Table extracted from http://www.worldbank.org/research/povmonitor/ on July 08, 2002.

Poverty and Growth

- Are the millenium development goals pie in the sky?
- Lets begin by looking in the available data at the roles of growth and redistribution
- growth has a big effect on poverty – Besley-Burgess (2003) take all countries where there is more than one household
- survey (i.e. panel) and run a regression of the form:

$$\log P_{it} = \theta_i + \eta \log \mu_{it} + \varepsilon_{it}$$

- where P_{it} is the headcount poverty rate for country i at time t based on the \$1 a day poverty line, θ_i is a country fixed effect, μ_{it} is real per capita national income for country i at time t,and ε_{it} is the error term

Table 2: Growth and Poverty Across the Globe 1990-2015

	Whole sample	East Asia and Pacific	Eastern Europe and Central Asia	Latin America and Carribean	Middle East and North Africa	South Asia	Sub-Saharan Africa
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Growth elasticity	-0.76 (0.25)	-1.01 (0.14)	-1.14 (1.04)	-0.73 (0.29)	-0.72 (0.64)	-0.72 (0.35)	-0.49 (0.23)
Annual growth rate needed to halve world poverty by 2015	3.6%	2.7%	2.4%	3.8%	3.8%	3.9%	5.6%
Historical growth 1960 – 1990	1.7%	3.3%	2.0%	1.3%	4.3%	1.9%	0.2%
Total growth needed to halve world poverty by 2015	91%	68%	61%	94%	95%	96%	141%

Source: Authors' Calculations – see web address for details.

Notes: Robust standard errors in parenthesis.

Looking Within India

- Household surveys have been carried out in India by the National Sample Survey Organisation since the late 1940s
- Can use these to construct poverty series for a panel of Indian states for the period 1958-2000
- Look at sixteen main states of India which cover 95% of the Indian population
- Then relate these to economic growth using panel series on GDP per capita for sixteen main Indian states

- Run regression of the form

$$p_{st} = \alpha_s + \gamma_t + \beta_s y_{st} + \varepsilon_{st}.$$

- where s denotes an Indian state and t denotes a year, α_s is a state fixed effect, γ_t is a year fixed effect, p_{st} is the log of the poverty headcount ratio, and finally y_{st} is the log of income per capita and ε_{st} is the error term

- these regressions are run separately for the sixteen main Indian states for the period 1958-2000 exploiting the fact that, as seen in Figures 5 and 7, there is significant heterogeniety in both growth and poverty reduction across Indian states.

find huge variation in the poverty-growth elasticity β across Indian states for the period 1958-2000 and also variation in the growth rates (g)

Decomposition

In comparing poverty reduction experiences across Indian states, it is useful to consider the following decomposition:

$$\Delta\hat{p}_{st} = \bar{\beta}\bar{g} + (\hat{\beta}_s - \bar{\beta})\bar{g} + \beta_s\,(g_s - \bar{g})\,.$$

where $\bar{\beta}$ is the average poverty-growth elasticity and $\bar{g}$ is the average growth rate. The first term is thus the average reduction in poverty, the second term is a measure of the efficacy of growth in reducing poverty, and the third term is a measure of how the growth level differs across states.

Intuitively, there are two routes through which poverty reduction performance can be enhanced:

1. By having higher than average poverty-growth elasticities – i.e. the $(\hat{\beta}_s - \bar{\beta})\bar{g}$ element.

2. By having higher than average growth rates – the $\beta_s\,(g_s - \bar{g})$ element.

We then let the data tell us which states have done better than average in any of the relevant dimensions. The values given by the decomposition of these elements are in Table 6. The poverty-growth elasticity component is in column (3), while the growth rate component is in column (4).

Examining the sign of these two effects allows us to group states into four groups (see Box 1):

- $--$ states – these are low performing states which are doing worse than average in terms of both poverty elasticities and growth rates

- $++$ states – these are high performing states that are doing better than average in terms of both poverty elasticities and growth rates

- $+-$ states – these are states which have higher than average poverty elasticities but lower than average growth rates

- $-+$ states – these are states which have lower than average poverty elasticities but higher than average growth rates

- helps us to explain differences in poverty performance – e.g. Kerala a $--$ state has witnessed limited reduction in poverty because lower than average poverty-growth elasticity and lower than average growth rates (like sub-Saharan Africa in cross country analysis) whereas Kerala a $++$ state witnessed dramatic reductions in poverty because had higher than average poverty-growth elasticities and higher than average growth rates (like East Asia in cross country analysis)

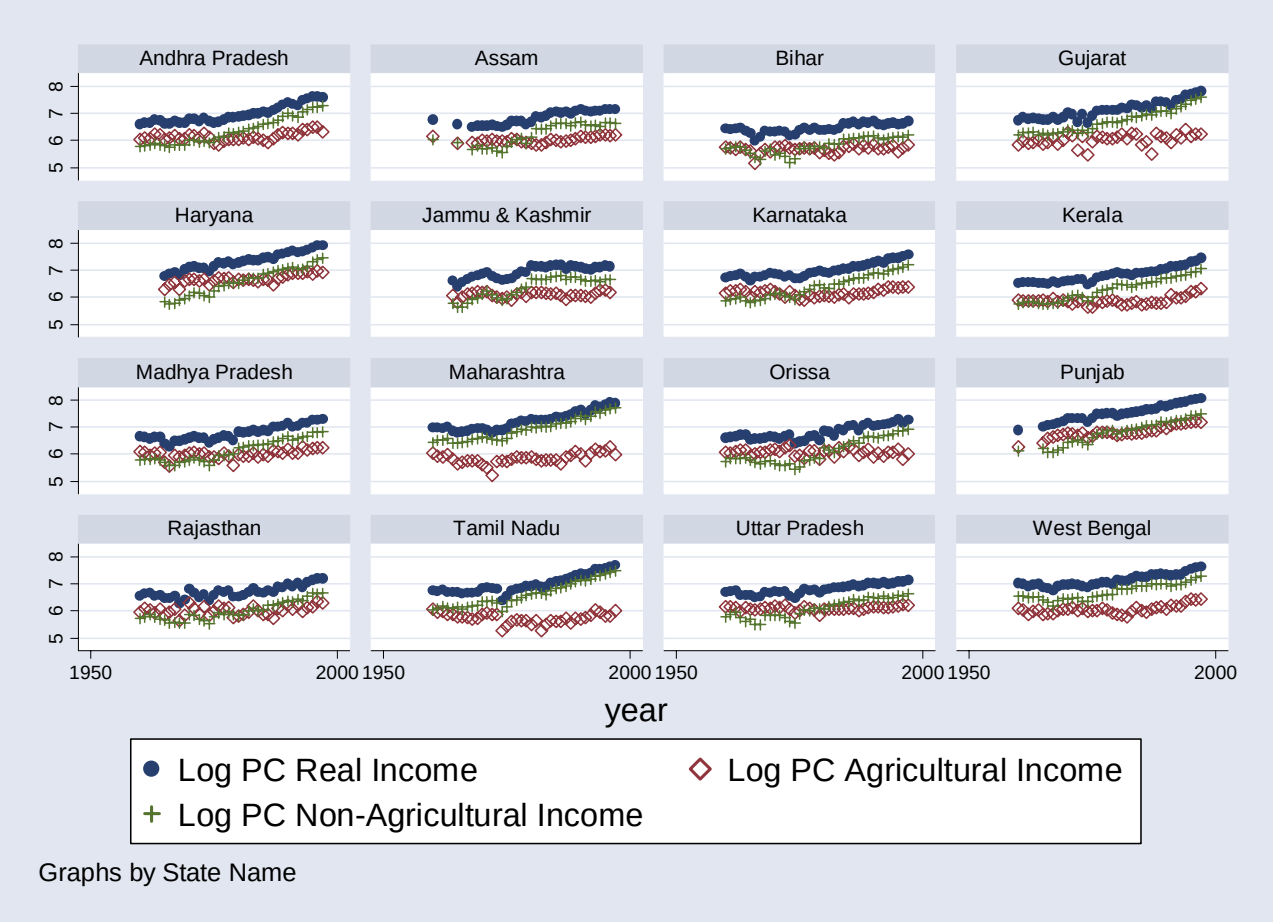

Figure 5. Changes in total real income per capita and of agricultural and non-agricultural components, by Indian state, 1958-1997

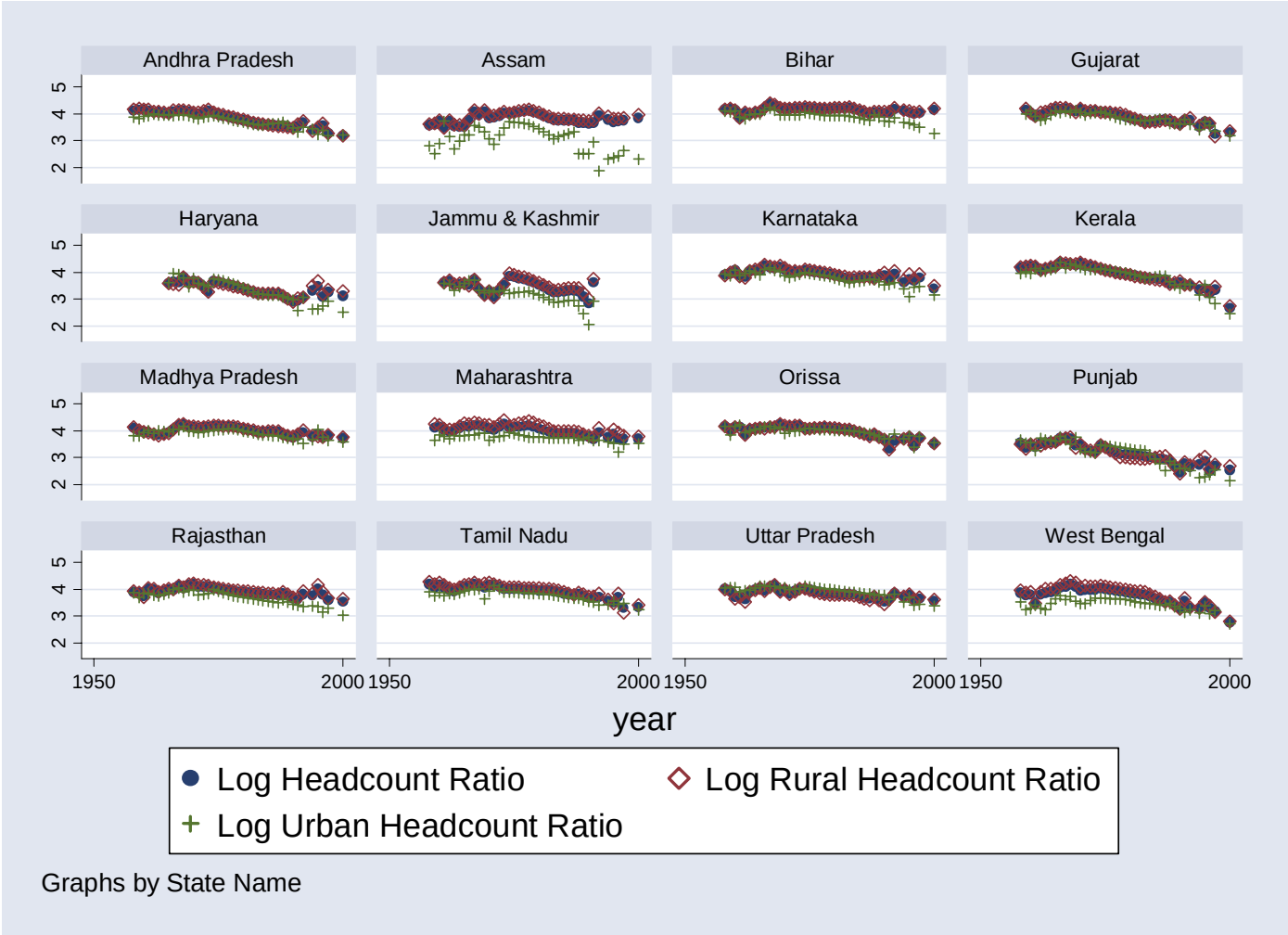

Figure 7. Changes in total, rural and urban poverty, by Indian state, 1958-2000

Table 6. Decomposition into total poverty elasticity and growth components

State	β_s	g_s	$\bar{g}(\beta_s - \bar{\beta})$	$\beta_s(g_s - \bar{g})$
	(1)	(2)	(3)	(4)
Andhra Pradesh	-0.76	0.028	0.17	0.24
Assam	-0.38	0.021	-0.41	-0.07
Bihar	-0.30	0.012	-0.53	-0.23
Gujarat	-0.66	0.027	0.02	0.18
Haryana	-0.57	0.031	-0.12	0.32
Jammu & Kashmir	-0.57	0.018	-0.12	-0.19
Karnataka	-0.53	0.024	-0.19	0.02
Kerala	-1.23	0.026	0.90	0.21
Madhya Pradesh	-0.39	0.022	-0.39	-0.03
Maharashtra	-0.40	0.029	-0.38	0.15
Orissa	-0.69	0.021	0.06	-0.12
Punjab	-1.03	0.030	0.61	0.46
Rajasthan	-0.43	0.018	-0.33	-0.15
Tamil Nadu	-0.59	0.029	-0.09	0.24
Uttar Pradesh	-0.64	0.015	-0.01	-0.34
West Bengal	-1.17	0.021	0.82	-0.21
Average	-0.65	0.023	0.001	0.03

Notes: log head count regressed on log real income per capita. The decomposed elements in (3) and (4) have been normalized dividing by $\bar{\beta}\,\bar{g}$.

Box 1. Classification of states according to total poverty elasticity and growth components

	(+) High growth	**(-) Low growth**
(+) High poverty elasticity	Andhra Pradesh Gujarat Kerala Punjab	Orissa West Bengal
(-) Low poverty elasticity	Haryana Maharashtra Tamil Nadu	Assam Bihar Jammu & Kashmir Karnataka Madhya Pradesh Rajasthan Uttar Pradesh

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(1) Property Rights

- Acemoglu-Johnson-Robinson $\longrightarrow$ countries with less risk of expropriation experience higher growth rates

- Increasing evidence that secure agricultural land rights, in particular, are an important vehicle for the poor that may promote both equity and efficiency (Banerjee, Gertler, Ghatak – West Bengal), (Besley-Burgess – India), (Lin – China)

- Stregthening property rights in urban areas (e.g. titling) can increase investment, enhance labor supply and improve trust in government (Field – Peru, Galliani et al – Argentina)

- Weak legal systems/courts $\longrightarrow$ problem in enforcing property rights (e.g. speed of resolving cases)

(2) Human Capital

- Returns to education high $\longrightarrow$ each additional year of schooling with a 6-10 percent increase in earnings (Duflo – Indonesia) $\longrightarrow$ skilled people key to competing globally

- How can access to education be increased? Including at secondary and tertiary levels.

- Increase supply $\longrightarrow$ role for NGO run and private schools often important here

- Change mixture of inputs $\longrightarrow$ randomized experiments (in variety of coutries) look at how changing inputs affects outcomes look at how changing inputs affects outcomes (e.g. adding contract teachers)

- Change the way you teach kids $\longrightarrow$ growing interest in pedagogy $\longrightarrow$ role of IT $\longrightarrow$ matching material to skills and ability

- Incentivize teachers, pupils and schools $\longrightarrow$ incentivize kids to stay in school (Progressa, school meals) $\longrightarrow$ incentives, monitoring and competition key $\longrightarrow$ accountable and effective public schooling, for example, may require a variety of monitors and competitors $\longrightarrow$ including different levels of government, community and non-governmental organizations and the private sector (Reinikka and Svensson – Uganda; Hsieh and Urquiola – Chile).

(3) Infrastructure and Urbanization

- Communication technologies $\longrightarrow$ cell phones $\longrightarrow$ new studies finding effects on price integration, efficiency and productivity

- Transportation infrastructure $\longrightarrow$ reduce trade costs $\longrightarrow$ effects on output but also in reducing volatility of output in countries heavily reliant on agriculture (Donaldson – railways in India)

- Power sector $\longrightarrow$ electricity $\longrightarrow$ key capacity, political economy and pricing issues $\longrightarrow$ industrial users often at disadvantage due to theft and lobbies

- Renewed focus on urban planning as world becomes more urban $\longrightarrow$ creation of new cities $\longrightarrow$ Paul Romer

(4) Finance

- Access to credit central to expanding productive opportunities and promoting entrepreneurship

- A central concern in this literature is whether changes in institutional design can overcome the problems of elite and political capture which have plagued formal credit.

- Look at whether changing the way that formal credit institutions deliver credit can affect outcomes. Burgess and Pande $\longrightarrow$ social banking experiment in India $\longrightarrow$ licensing rules were used to force commercial banks to open over 30,000 branches in rural areas $\longrightarrow$ growth in non-agricultural sector and reductions in rural poverty

- Microfinance $\longrightarrow$ means of reaching the unbanked

(5) Regulation

- Postwar model of economic development was built on a raft of regulation $\longrightarrow$ benevolent governments intent on fixing market failures $\longrightarrow$ vogue for planning $\longrightarrow$ regulation on entry (e.g. licensing), regulation on trade (e.g. tariffs), labor regulation

- Djankov et al. collect data on the time and number of procedures an entrepreneur must complete to officially open a business in 85 countries $\longrightarrow$ stricter regulation of entry $\longrightarrow$ less democratic governments, greater corruption and larger unofficial economies $\longrightarrow$ entry regulations appear not to be in the public interest.

- Besley and Burgess find that pro-worker state-level amendments to the Industrial Disputes Act that in India were associated with lower investment, productivity and output in registered manufacturing and higher urban poverty

(6) Trade

- Debate has tended to focus on for or against free trade issue
- Within-country studies have shown that reality more nuanced
- Local institutions and conditions turn out to be key in determining whether a particular region benefits from opening to trade
- For example, in India, same three-digit industry responds very differently to lowering of tariffs or removal of licensing requirements depending on whether state has pro-labor or pro-employer labor regulations $\longrightarrow$ industries in pro-employers states grow more quickly (Aghion, Burgess, Redding, Zilibotti)

(7) Public Finance

- Raising local resources key to development and the promotion of growth
- Renewed focus on tax collection $\longrightarrow$ why is tax evasion so widespread in developing world?
- Linking taxation to percieved benefits of taxation $\longrightarrow$ for example, local public goods (Chetty) $\longrightarrow$ design of new incentive schemes to encourage payment of taxes jointly with tax authorities
- Rethinking structure of taxation $\longrightarrow$ move away from inefficient trade and barrier taxes

(8) Responsiveness and Accountability of Government

- Recent research has begun to look at how governments can be made more responsive and accountable for their actions.

- Besley and Burgess show that state governments in India are more responsive to falls in food production and crop flood damage via public food distribution and calamity relief expenditure where newspaper circulation is higher. They also find that higher political competition and electoral turnout are associated with greater responsiveness to food production shortfalls and floods.

- Thinking about incentives for service providers $\longrightarrow$ reforms of civil service $\longrightarrow$ role for NGOs and private sector

Summing Up

- Empirical approaches based on sub-national data provide the most credible base for economists to influence the debate about how to tackle global poverty reduction.

- The evidence based approach to policy has proven effective in a range of industrialized countries and its expansion into the developing world is long overdue.

- The overarching theme is on the centrality of the institutional context in which policy and accumulation decisions are made.

- Responsibility for achieving the goal of cutting global poverty rates in half lies firmly at the door of domestic governments.

- Aid and debt reduction to play limited role.

- Advantages of economics evidence based approach

  - unique among the social sciences, it provides a consistent and common theoretical framework within which we can evaluate policy and institutional reforms

  - it is in a position to provide some quantification of the effects of various measures

- advances in theoretical and empirical political economy provide a basis for encompassing an agenda that puts more weight on institutional change

- there is real promise that we can, in future, deliver a better understanding of the micro-economic processes that generate income growth.

- The kind of evidence currently being built by micro-economic research at the sub-national level will doubtless be the most persuasive and credible advice to policy makers in the decade to come. But it is clear that, when it comes to halving global poverty, there is no magic bullet.