

EC 307: Lecture 1

Property Rights

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Approach

strong applied focus

textbook – Ray – Development Economics

journal articles – focus on the practice of policy analysis – class exercise each week built around one paper

methodology we adopt in looking at papers

- derive testable implications from the theory
- subject these to econometric testing

- comment on the robustness of results → econometric problems
- draw out policy conclusions

→ this is the structure followed in the class exercises

→ several questions in exam also likely to follow this format

→ important to learn how to interpret results from applied econometrics papers

→ important to learn how to draw out policy implications from theoretical and empirical analyses

focus is on uniting theory, data and policy

alot of theory developed → key challenge now is to test theory

data analysis → powerful tool for looking at how world works and at whether policies pursued affect such outcomes as poverty and growth → helps us understand how world works in a more rigorous manner → data analysis increasingly serves as a key input into policy design at all levels

without data analysis to help us to discriminate between competing theoretical claims on how world works and to identify which policies are effective in fostering economic performance then the debate just degenerates into a competition between competing opinions → person with greater power/better public relations skills will tend to win the day → this is no basis on which to formulate policies which affect the welfare of millions of people

older literature strongly characterised by this problem → not enough data to discriminate between competing theories (e.g. protectionist versus free trade debates) → a lot of bad policy was implemented

modern approach → more pragmatic and agnostic → basically scientific approach → develop theory about how the world works → then go out and test theory using data → in this way slowly build up body of evidence as to how world works → this is the basis of modern social science

hence even if students do not themselves participate in data analysis themselves ⇒ still need to be able to understand results and implications of data analysis

identification of effects of policy spans the space from randomized evaluation to cross-country growth regressions

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 or 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 → ratio of 15.8

Years of Schooling: USA: 12; India 3.68 → ratio of 3.26

Capital per worker: USA: 4570 bn; India with 685: ratio of 6.7

Poverty

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

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

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 → 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 → 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
→ 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 → poverty varies strongly over space and time → 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 Caribbean	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.

Redistribution and Poverty

we can also look at how inequality affects poverty to get some handle on whether redistribution might be another route for reducing poverty - to do this we run regressions of the type

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

where σ_{it} is income inequality for country i at time t measured by the standard deviation of the income distribution in logs

fine that β is positive and significant – see Table 3 in Besley-Burgess (2003) – reducing inequality can have a big negative effect on poverty

Table 3: Inequality and Poverty Reduction

	Whole sample	East Asia and Pacific	Eastern Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Standard deviation of income distribution in logs	0.76 (0.24)	0.72 (0.11)	0.54 (0.15)	0.98 (0.16)	0.67 (0.12)	0.59 (0.06)	0.86 (0.22)
Poverty decline after a one standard deviation reduction in inequality	67%	31%	42%	45%	34%	17%	62%

Source: Authors' Calculations – see <http://econ.lse.ac.uk/staff/tbesley/hgp/> for details.

Notes: Standard deviation in parenthesis.

The Agenda for Reducing poverty

(1) Human Capital

Developed and developing countries → each additional year of schooling is associated with a 6-10 percent increase in earnings (Duflo, 2001) → investment in education can be used to attack poverty both by encouraging economic growth and as a method of redistribution to the poor → but how can education be expanded?

Policy redesign → randomized experiments in Western Kenya look at whether increasing the supply of textbooks or improving child health affect attendance and attainment in NGO run schools (Glewwe, Kremer and Moulin, 2000; Kremer and Miguel, 2002).

Rorganization of how policy is delivered → public schooling, for example, may require a variety of monitors and competitors - including different levels of government, community and non-governmental organizations and the private sector - in order to be accountable and effective (Reinikka and Svensson, 2002; Hsieh and Urquiola, 2002).

(2) Finance

Access to credit central to expanding productive opportunities

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 (2004) → social banking experiment in India → licensing rules were used to force commercial banks to open over 30,000 branches in rural areas → reductions rural poverty

Microfinance

(3) Property Rights

Increasing evidence that secure land rights, in particular, are an important vehicle for the poor that may promote both equity and efficiency.

Acemoglu-Johnson-Robinson (2001) – countries with less risk of expropriation experience higher growth rates

Lin (1992), for example, showed that the move from collective to household farming in China starting in 1978 led to large productivity increases in agriculture.

(4) Regulation

Postwar model of economic development was built on a raft of regulation → benevolent governments intent on fixing market failures → vogue for planning

Djankov et al. (2002) collect data on the time and number of procedures an entrepreneur must complete to officially open a business in 85 countries – find that heavy regulation of entry is associated with less democratic governments, greater corruption and larger unofficial economies - which supports the idea that entry regulations are not in the public interest.

Besley and Burgess (2002a) 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

(5) 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 (2002) 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.

Djankov et al. [2001] develop a remarkable data set on media ownership patterns in 97 countries and find that state ownership of the media is, on the whole, negatively correlated with good government.

Summing Up

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

Reading this literature suggests that the gap between the agendas of the global NGOs and the economics profession is not that large.

It also seems at odds with the common portrayal of economists as seeing free markets and unfettered growth as the being the only routes of poverty.

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

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

(2) it is in a position to provide some quantification of the effects of various measures.

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

(4) 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.

Property Rights and Economic Development

property rights seen as critical to encouraging trade and exchange (North, 1991)

poverty trajectories do suggest that institutions matter – difficult to reconcile with fixed effect argument for example based on geography

seen by many as prerequisite for economic development and poverty reduction

some recent testing of this idea by Acemoglu, Johnson and Robinson (2001)

in places where Europeans could not settle due to high mortality they were more likely to set up extractive institutions

OLS regression

$$\log y_i = \mu + \alpha R_i + X_i' \gamma + \epsilon_i$$

where y_i is income per capita in country i , R_i is the protection against expropriation measure, X_i is vector of other covariates, and ϵ_i is a random error term

R_i measured on a scale from 1 to 10

institutions measure R_i strongly correlated with income per capita

if include regional dummies and measures of geography such as latitude the effect remains

problems

(1) richer countries may be able to afford better institutions

(2) may be many omitted determinants of income differences which are correlated with institutions

solution → find instrument for institutions → needs to be important factor in accounting for institutional variation we observe but should have exert direct effect on economic performance

have data on mortality rates faced by soldiers, bishops and sailors in the 17th, 18th and 19th centuries

idea use settler mortality M_i as instrument for R_i – see Table 4

(potential) settler mortality \Rightarrow settlements \Rightarrow early institutions \Rightarrow current institutions \Rightarrow current performance

find 2SLS estimates which are larger than OLS estimates

IV procedure depends on assumption that settler mortality in the past has no direct effect on economic performance

authors find result is robust to including variables for colonial origin, legal origin, religion, disease, geography

institutions matter!

drawback \Rightarrow institutions treated like black box \Rightarrow results have limited direct policy relevance

Table 4
IV Regressions of log GDP per capita

	Base Sample (1)	Base Sample (2)	Base Sample without neo-Europes (3)	Base Sample without neo-Europes (4)	Base Sample without Africa (5)	Base Sample without Africa (6)	Base Sample with Continent Dummies (7)	Base Sample with Continent Dummies (8)	Base Sample, dep. var. is log output per worker (9)
<i>Panel A: Two Stage Least Squares</i>									
Average Protection Against Expropriation Risk 1985-1995	0.94 (0.16)	1.00 (0.22)	1.28 (0.36)	1.21 (0.35)	0.58 (0.10)	0.58 (0.12)	0.98 (0.30)	1.10 (0.46)	0.98 (0.17)
Latitude		-0.65 (1.34)		0.94 (1.46)		0.04 (0.84)		-1.20 (1.8)	
Asia Dummy							-0.92 (0.40)	-1.10 (0.52)	
Africa Dummy							-0.46 (0.36)	-0.44 (0.42)	
"Other" Continent Dummy							-0.94 (0.85)	-0.99 (1.0)	
<i>Panel B: First-Stage for Average Protection against Expropriation Risk in 1985-95</i>									
Log European Settler Mortality	-0.61 (0.13)	-0.51 (0.14)	-0.39 (0.13)	-0.39 (0.14)	-1.20 (0.22)	-1.10 (0.24)	-0.43 (0.17)	-0.34 (0.18)	-0.63 (0.13)
Latitude		2.00 (1.34)		-0.11 (1.50)		0.99 (1.43)		2.00 (1.40)	
Asia Dummy							0.33 (0.49)	0.47 (0.50)	
Africa Dummy							-0.27 (0.41)	-0.26 (0.41)	
"Other" Continent Dummy							1.24 (0.84)	1.1 (0.84)	
R-Squared	0.27	0.30	0.13	0.13	0.47	0.47	0.30	0.33	0.28
<i>Panel C: Ordinary Least Squares</i>									
Average Protection Against Expropriation Risk 1985-1995	0.52 (0.06)	0.47 (0.06)	0.49 (0.08)	0.47 (0.07)	0.48 (0.07)	0.47 (0.07)	0.42 (0.06)	0.40 (0.06)	0.46 (0.06)
Number of Observations	64	64	60	60	37	37	64	64	61

The dependent variable in columns 1-8 is log GDP per capita in 1995, PPP basis. The dependent variable in column 9 is log output per worker, from Hall and Jones (1999). "Average Protection Against Expropriation Risk 1985-95" is measured on a scale from 0 to 10, where a higher score means more protection against risk of expropriation of investment by the government, from Political Risk Services. Panel A reports the two stage least squares estimates, instrumenting for protection against expropriation risk using log settler mortality; Panel B reports the corresponding first stage. Panel C reports the coefficient from an OLS regression of the dependent variable against average protection against expropriation risk. Standard errors are in parentheses. In regressions with continent dummies, the dummy for America is omitted. See Appendix Table A1 for more detailed variable descriptions and sources.

Property Rights over Land

lets look at a specific form of property rights

property rights in land → developed in response to rising population densities
→ led to greater investments in fertilisers etc

but see alot of diversity in terms of property right structures → common property, communal land rights etc

codifying and protecting property rights seen in many contemporary and historical discussions as important to providing the conditions of economic growth

e.g. sub-Saharan Africa → individualistic notions of ownership not developed
→ explains poor growth performance

but what is mechanism linking property rights to economic performance

→ investment incentives

stronger property rights → investment incentives → growth

does this relationship hold → empirical question → need two things

(i) measure of investment

(ii) a source of variation (preferably exogenous) in rights

developing countries → interesting test ground as property rights not properly developed

Links between Property Rights and Investment Decisions

three channels discussed in theoretical literature (see Besley, 1995, 1998)

(1) Risk of Expropriation

insecurity → like random tax on returns of investment

(i) level effect – overall reduction in investment

(ii) composition effect – invest in assets which are less subject to expropriation
→ invest in more portable assets (e.g. livestock)

(2) Gains from Trade

gains from trade may be realised institutions where land is disposed of to someone who has a better use for it (standard comparative advantage argument)

incomplete property rights → impair trade in land → true, in particular, for rights to sell or rent land

→ improving possibilities for trade in land can improve investment incentives when the gains from trade raise the marginal returns to land

Besley (1995) → formal version of this argument → investor faces stochastic trading opportunities and improvements in rights are modelled as reductions in transaction costs → so there is more land trading after rights are improved

rights to sell and buy land → important rights to explain investment

(3) Collateral and Credit Markets

—→ indirect benefit

assume two things

(i) improvements in land rights —→ encourage lenders to recognise land as collateral

(ii) borrowers are dependent on access to credit for their investment in the land

—→ then two ways that land rights can be linked to investments

(i) in competitive credit market without information problems, improved access to collateral reduces the risk premium on lending and hence reduces the interest rate faced by the borrower → this can encourage investment

(ii) with credit market imperfections → collateral can reduce agency problems → can improve access to credit, for example, by reducing credit rationing → encourage investment

TABLE 3

WASSA: INVESTMENTS IN TREE PLANTING ($N = 1,074$)

	Uninstrumented (1)	Instrumented (2)	Rights with Approval (3)	Rights without Approval (4)
Rights with approval	.03 (1.93)	.12 (1.93)		
Rights without approval	.02 (1.56)	.11 (1.68)		
Number of past tree plantings	.19 (4.34)	.14 (2.72)		
Average age	-.00 (.40)	-.00 (.04)	-.01 (.26)	-.00 (.52)
Value of durables	.00 (1.80)	.00 (2.21)	-.00 (.49)	-.00 (1.98)
Livestock value	-.00 (2.05)	-.00 (1.78)	-.00 (2.48)	.00 (2.77)
Formal education of head	.01 (.23)	-.01 (.47)	.18 (1.68)	.00 (.04)
Women	-.01 (.78)	-.01 (.21)	-.08 (2.66)	.04 (1.58)
Men	.01 (2.03)	.02 (2.28)	-.02 (1.67)	.03 (1.32)
Rooms	-.00 (.45)	-.01 (1.22)	.08 (3.93)	-.03 (1.34)
Distance from house	.01 (1.44)	.01 (1.63)	-.05 (1.39)	.01 (.35)

Soil very fertile	.07 (1.38)	.09 (1.52)	-.58 (2.43)	.41 (1.87)
Soil fertile	-.07 (1.43)	.10 (1.68)	-.87 (4.02)	.51 (2.53)
Field area	-.02 (12.55)	-.02 (12.01)	.00 (.01)	-.00 (.06)
Field purchased			-.22 (.90)	.60 (2.64)
Field allocated			-.13 (.61)	.28 (1.47)
Field appropriated			.36 (1.57)	.28 (1.31)
Field gifted			-.86 (3.49)	.98 (4.29)
No title deed			.01 (.34)	-.34 (2.25)
Number of years owned			-.01 (.75)	.01 (.91)
Trees existing at time of acquisition			.08 (.43)	-.18 (.97)
Ever litigated on field			-.11 (.56)	.23 (1.25)
Test of overidentification restriction (<i>p</i> -value)		.90		
Village dummy variables	Yes	Yes	Yes	Yes
<i>F</i> -test on significance of instruments (<i>p</i> -value)			.00	.00
\bar{R}^2	.35	.33	.38	.39

NOTE.—Absolute values of *t*-statistics are in parentheses. The omitted classification in the mode of acquisition is inheritance and in soil type is poor.