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Institutions and Pro-Poor Growth: Towards a Framework for Quantitative Analysis

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ABSTRACT

This paper reviews existing quantitative research on the relationship between institutions and economic growth in general, and pro-poor growth in particular. The tools proposed by the Operationalising Pro-Poor Growth (OPPG) programme are extremely useful in generating stylized facts about pro-poor growth; however, the OPPG tools in most part do not provide an analysis of the determinants of pro-poor growth. Cross-country econometric methods, which have been the dominant approach in the literature, suffer from weak instrument problems that make it difficult to interpret the role of institutions in economic growth as causal; furthermore, cross-country regression analysis is based on the implicit assumption of 'homogeneity' in the observed relationship across countries, an assumption which seems untenable when considering the context-specificity of the impact of institutions on economic growth. Further quantitative research on institutions and pro-poor growth should address the determinants of the form and functioning of economic institutions and their impact on pro-poor growth, using sub-national units (region/state/village), households and firms as units of analysis.

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INTRODUCTION

This paper was prepared as part of the literature review on institutions and pro-poor growth in the inception phase of the IPPG programme, the broad objective of the paper is to develop a framework which can serve as the basis for the quantitative analysis to be undertaken in the next phases of the programme. Within this, the paper has three specific objectives: firstly, the paper summarises the main tools that have been used in the Operationalising Pro-poor Growth Programme (OPPG), a multi-country research programme funded by four donors – DFID, The World Bank, and the French and German bilateral aid agencies – in 2004–2005. A defining characteristic of the OPPG studies was the use of a common set of tools in the fourteen country case-studies undertaken in the programme; in section two of this paper, we will review the OPPG tools with a view to examine the relevance of these tools in the quantitative analysis of pro-poor growth that we expect to undertake in the IPPG programme. Secondly, section three of the paper will review existing cross-country econometric methods, which have been the dominant quantitative approach in the empirical literature on institutions and economic growth; following this, in section four, we will develop a set of researchable questions drawn from the analytical framework of the IPPG programme that we feel are amenable to quantitative analysis. In sections five and six, we will further explore how these questions can be operationalized, in terms of specific econometric methods and hypotheses, at the macro and micro levels of analysis. Finally, section seven sums up what we have learnt during the course of the review and the way forward for quantitative analysis in the IPPG programme.

THE OPPG TOOLS

The set of tools that have been used in the fourteen country case-studies that constitute the OPPG programme provide a common basis for comparing the extent these countries have achieved pro-poor growth, and in understanding key similarities and differences in the countries studied, in terms of the patterns of pro-poor growth; the tools can be classified into three categories: 1) those that describe economic growth, and its various components; 2) those that describe changes in poverty and inequality in relation to growth; and 3) those that explain the links between growth, inequality and poverty reduction.

Pro-poor growth can be defined in two ways; the first definition takes growth to be pro-poor if the change in inequality associated with the growth process is such that the incomes of the poor grow faster than those of the non-poor (Kakwani and Pernia, 2000) – thus, pro-poor growth occurs if poverty falls more than it would have if all incomes had grown at the same rate. A concern with this definition is that in contracting economies, distributional changes can be ‘pro-poor’ with no absolute gain to poor people, or even falling incomes for them. Equally, a ‘pro-rich’ distributional shift during a period of overall economic expansion may come with large absolute gains to the poor.

A second definition takes growth to be poor if it leads to poverty reduction for some choice of a poverty measure, here, poverty now solely depends on the rate of change in poverty. This will depend in part on what happens to inequality. However, under this definition, pro-poor growth can occur even if inequality increases during the growth process.

The first definition is referred to as ‘relative pro-poor growth’ and the second as ‘absolute pro-poor growth’. The OPPG programme uses both definitions of pro-poor growth, given that they both capture different aspects of the growth-inequality-poverty relationship.

OPPG tools that describe economic growth

The tools that are proposed in this category are standard measures of economic growth – growth of GDP both in the aggregate and in its sectoral components (e.g. agriculture, manufacturing, services), though a measure of growth that is closer to poverty measures is the mean rate of growth of household consumption (obtained from household expenditure surveys). While this measure has certain advantages in that one can use it to look at the distributional impact of growth (e.g., by location, income group, personal or household characteristics, etc.), the infrequent nature of household surveys implies that this measure of growth cannot be computed on a regular basis.

A useful tool in this category is *growth accounting analysis*, where growth of GDP is decomposed into the growth of different factors of production (physical capital, human capital, labour force) and a residual, which is the growth of total factor productivity; the latter can be attributed to changes in technology. Since institutions can matter in affecting both factor accumulation and total factor productivity growth, the growth accounting analysis can usefully lead to a second-stage analysis where one can relate institutions to the sources of growth.

OPPG tools that describe poverty and inequality changes in relation to growth

The first set of tools here are measures of poverty over time, and across regions and household groups. Standard to most studies of poverty, the OPPG studies used the *headcount ratio*, the *poverty gap index* (which takes account of the average shortfall below the poverty line) and the *squared poverty gap index* (which places still greater weight on the poorest of the poor) to measure poverty – the first measuring the proportion of individuals below the poverty line, while the last two measure the severity of poverty. Some

of the OPPG studies also use the *Watts index*, which is the population mean of the logarithm of the ratio of the poverty line to censored income, where the latter is actual income for those below the poverty line and the poverty line for those above it. An advantage of this index is that it penalizes inequality among the poor, furthermore, it is the unique poverty measure that satisfies a complete set of axioms for an ideal poverty measure (Zheng 1993).

Figure 1 plots the headcount ratio, the poverty gap and the squared poverty gap indices, and the Watts index for Brazil for the period 1981–2001 (obtained from the Brazil OPPG study). It is clear that while both the head count ratio and the Watts index fell between 1993 and 1997, the fall in the Watts was greater, suggesting a decrease in inequality among the poor.

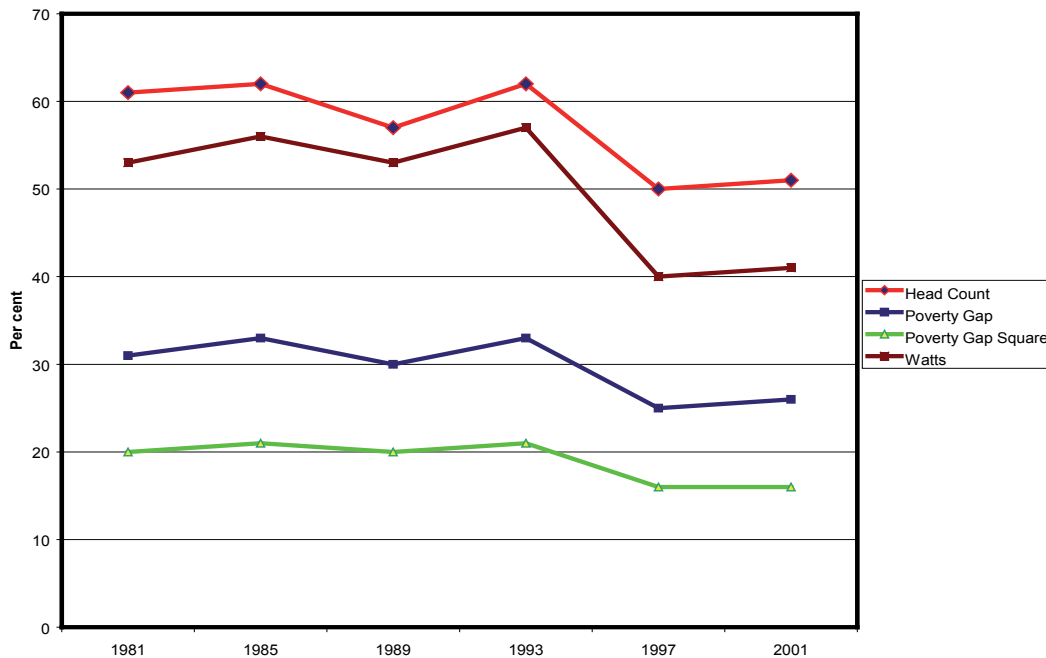


Figure 1. Poverty Rates for Brazil, 1981–2001

Source: Menezes-Filho and Vasconcellos (2004)

The evolution of inequality across household groups and sectors (say, rural-urban) can be measured by the Gini coefficient. Changes in inequality can also be analysed using the *decomposition of the Theil index*, to changes in inequality between as well as within groups – using Uganda as an example, between-group inequality increased from 16.1% in 1992/93 to 19.5% in 2002/2003, suggesting that rural-urban differentials have increased in importance in explaining inequality in Uganda in the same period.

Sectoral contributions to changes in poverty can be analysed using the *Ravallion-Huppi decomposition* (1991), this decomposition summarises the contribution of each sector to overall poverty change, taking into account the changes in poverty due to people moving from one sector to another. For example, in Uganda, nearly 21% of total poverty reduction over 1992–93 to 2003–04 reflects the increased numbers of households working in activities where poverty levels are lower – the migration effect. On the other hand, nearly half of total poverty reduction represents a reduction in poverty among non-cash crop farmers.

The *Datt-Ravallion decomposition* (1992) helps in identifying the relative contributions of two proximate causes of poverty reduction: increases in economic growth (that is, changes in the average levels of household incomes) and decreases in inequality (changes in the distribution of household incomes). This initial decomposition can then lead to a further examination of the factors that accounted for the changes in average incomes or in their distribution. The decomposition technique relies on the definitional relationship between average income (or consumption), inequality and absolute poverty. Where the poverty line remains fixed in real terms, poverty will fall when average income rises (for a given level of inequality) or when inequality falls (for a given average income), thus, the technique decomposes the change in poverty into three terms:

- 1) a growth effect: the change in absolute poverty which would have occurred if the observed growth in the average income level had been the same for everyone;
- 2) a redistribution effect: the change in absolute poverty which would have happened if the observed change in inequality had occurred without the mean income changing;
- 3) a residual term: representing the inexact nature of the above decomposition in practice.

In Table 1, we provide estimates of the Datt-Ravallion decomposition for selected countries in the OPPG programme, in general, the growth component dominates, both in cases of reductions in poverty or

increases (as in Romania). It is interesting to observe that though there are several instances of absolute pro-poor growth, there are few instances of relative pro-poor growth (Bolivia, Burkina Faso and to a very limited extent, Brazil, are the only cases); moreover, if pro-poor growth was defined in relative terms, then Vietnam – the outstanding performer with respect to poverty reduction in the fourteen countries of the OPPG programme – would not be considered to have witnessed pro-poor growth. This suggests that from the viewpoint of the IPPG programme, as in the case of the OPPG programme, it is better to use both the 'absolute' and 'relative' definitions of pro-poor growth in the understanding of pro-poor growth processes.

Table 1. Changes in poverty decomposed into growth and redistribution components, selected countries

<i>Country & Years</i>	<i>Change in Poverty</i>	<i>Growth Component</i>	<i>Redistribution Component</i>
Bolivia, 1989–2002	-9.9	-6.4	-3.5
Brazil, 1993–2001	-10.2	-9.1	-1.2
Burkina Faso, 1994–2003	-8.3	-3.5	-4.8
Ghana, 1991–1998	-12.2	-13.1	0.9
Romania, 1992–2003	8.8	11.2	-2.3
Uganda, 1992–2003	-18	-26.3	8.3
Vietnam, 1993–2002	-29.7	-34.7	4.9

Note: the above table shows no residual term as the decompositions were calculated using 'average effects'.
Source: McKay (2005)

Another useful tool that links growth to poverty is the *growth elasticity of poverty*, it measures the percentage change in poverty in response to a one percent increase (or decrease) in average income. Growth elasticities are generally expected to be negative – absolute poverty tends to fall when income increases (and vice versa). In Table 2, we present estimates of the growth elasticity of poverty for selected Indian states. Kerala and West Bengal have significantly higher elasticities than Maharashtra and Uttar Pradesh. The differences in growth elasticities of poverty may in turn be linked to differences in the quality of institutions across Indian states, which would need further examination.

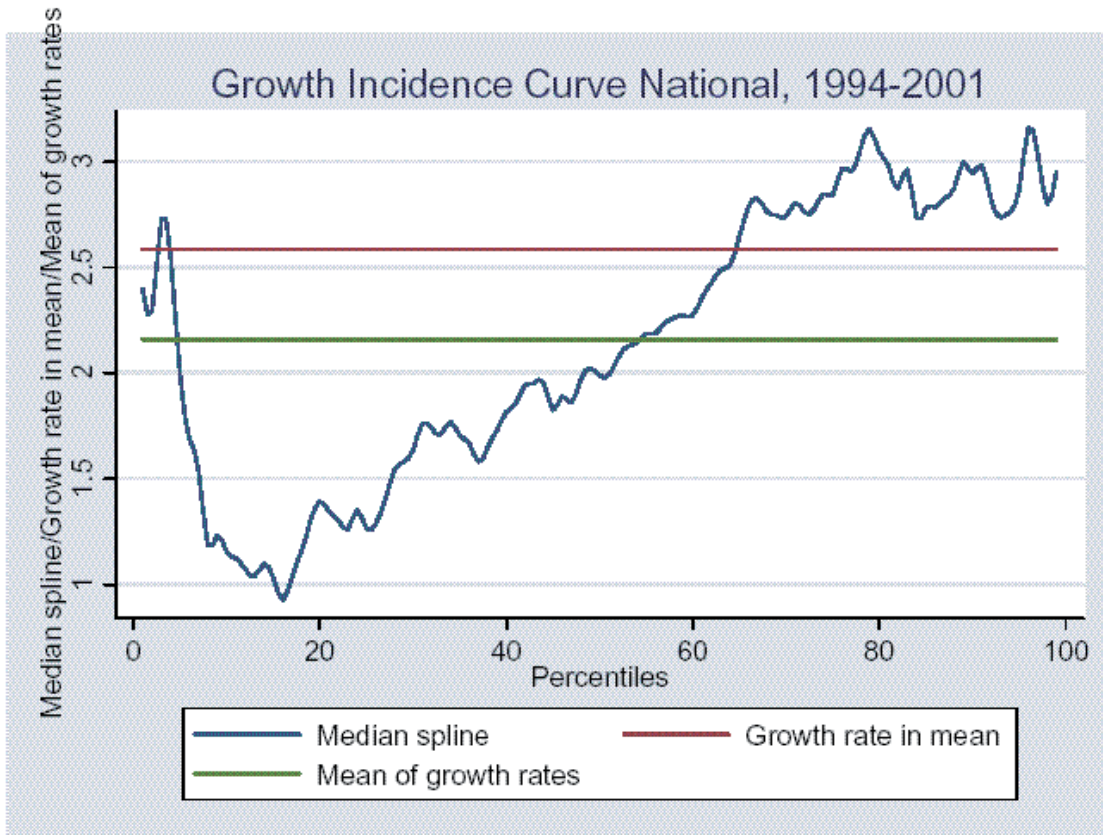
Table 2. Estimated growth elasticities of poverty for selected Indian states

<i>State</i>	<i>Growth elasticity of poverty</i>
Kerala	-1.2
Maharashtra	-0.4
Uttar Pradesh	-0.6
West Bengal	-1.2

Source: McKay (2005)

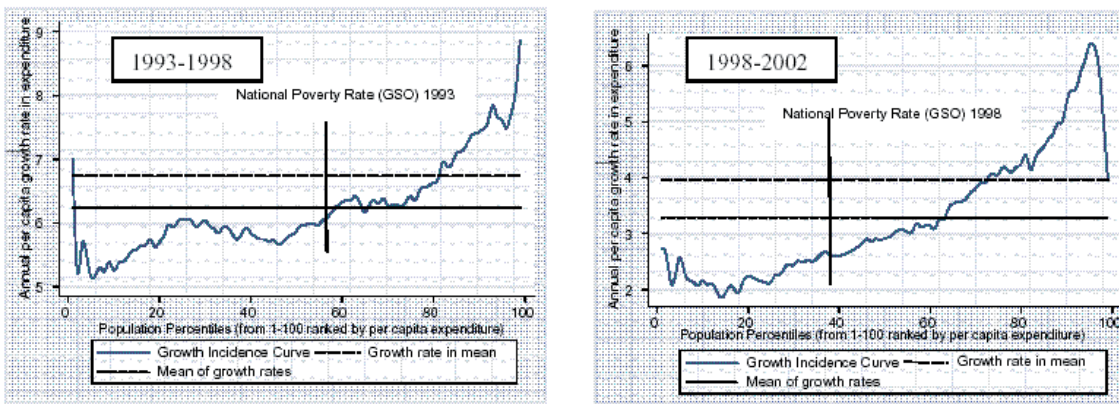
Perhaps the most useful tool for describing pro-poor growth is the *Growth Incidence Curve (GIC)*, which is a graphical representation of the rate of growth of income/consumption over a relevant time period at each percentile of the distribution of income/consumption (ranked by income/distribution per person) – thus, at the 50th percentile, the GIC gives the growth rate of median income (or consumption). If the GIC is above the zero axis at all points up to some percentile p^* , then pro-poor growth has occurred for all headcount indices up to p^* , and for all poverty measures within a broad class (Ravallion 2004). Figures 2 and 3 plot GICs for Senegal and Vietnam respectively. We note that for both these countries, absolute pro-poor growth has occurred in the time periods under consideration since the GICs are above the zero axis for all percentiles of the consumption distribution. However, absolute pro-poor growth has occurred to a significantly greater degree in Vietnam as compared to Senegal, especially during 1993–1998; furthermore, relative pro-poor growth cannot be said to have occurred in Senegal and Vietnam except for the poorest 10–15 per cent of the households.

Figure 2. Growth Incidence Curve for Senegal



Source: Azam et al. (2004)

Figure 3. Growth Incidence Curves for Vietnam, 1993-1998 and 1998-2002



Source: Klump and Bonschab (2004)

While the GIC provides a visual representation of whether pro-poor growth has occurred or not, Ravallion and Chen (2003) have proposed a summary statistic of pro-poor growth – *the rate of pro-poor growth*, which is the mean growth rate of incomes for the poor. This can be interpreted as the growth rate of incomes for the whole population (termed as the ‘ordinary growth rate’ in the OPPG studies) scaled up or down according to whether the distributional changes were pro-poor.¹ An important characteristic of the measure of pro-poor growth proposed by Ravallion and Chen is its link to the Watts index, as the rate of pro-poor growth is simply the change in the Watts index per unit-time divided by the headcount index (Ravallion 2004); thus, the rate of pro-poor growth indicates the direction of change of a theoretically defensible measure of the level of poverty, namely the Watts index. The rate of pro-poor growth can be compared to the ordinary growth rate to see whether pro-poor growth has occurred in a relative sense. If the rate of pro-poor growth is higher than the ordinary growth rate, then relative pro-poor growth is said to have occurred; if the rate of pro-poor growth is lower than the ordinary growth rate, then growth is associated with increasing inequality. Table 3 presents estimates of the rate of pro-poor growth along with the ordinary growth rate for selected countries in the OPPG programme. Among the nine countries,

1. The distributional correction is the ratio of the actual change in poverty over time to the change that would have been observed under distribution neutrality (that is perfectly flat GIC).

Vietnam (4.3%), followed by Brazil (3.2%), Uganda (2.7%) and Ghana (2.1%), has witnessed the highest rates of absolute pro-poor growth; countries that have witnessed relative pro-poor growth are Brazil, Bolivia, Burkina Faso and Zambia – in all these cases, growth was accompanied by lessening inequality.

Table 3. Rates of Pro-poor Growth and Ordinary Growth Rate, Selected Countries (per cent per annum)

<i>Country & Period</i>	<i>Rate of Pro-Poor Growth</i>	<i>Ordinary Growth Rate</i>
Bangladesh, 1992–2000	0.8	2.4
Brazil, 1993–2001	3.2	2.9
Bolivia, 1989–2002	1.8	1.4
Burkina Faso, 1994–2003	1.0	0.8
Ghana, 1991–1998	2.1	3.2
Romania, 1996–1999	-2.6	-3
Uganda, 1992–2003	2.7	3.8
Vietnam, 1993–2002	4.3	5.5
Zambia, 1991–1998	1.1	-0.9

Source: McKay (2005)

OPPG Tools that describe the links between growth, inequality and poverty reduction

The dominant tool used in some OPPG studies to examine the three-way-link between growth, inequality and poverty reduction is labour market analysis, since the labour market is the key market in understanding how growth can lead to poverty reduction, the OPPG studies conduct simple labour market analysis where the relationship between employment status and poverty is explored or sectoral analysis of employment trends is done to see which sectors are expanding in terms of employment and whether these sectors are the ones where poor households are the most concentrated. While labour market analysis can be useful in understanding where the stimulus to pro-poor growth has come from, it is merely a descriptive tool, rather than an analytical method for understanding the sources of pro-poor growth. Thus, labour market analysis cannot tell us why pro-poor growth has occurred; rather it is useful in telling us how it has occurred.

A few OPPG studies use intra-country regression analysis or simulate computable general equilibrium (CGE) models to examine the relationships between growth, inequality and poverty reduction and to explore the correlated of pro-poor growth. We will review these tools in Section five, while we review more generally some analytical methods that can be used to examine the relationship between institutions and pro-poor growth.

A REVIEW OF THE CROSS-COUNTRY ECONOMETRIC LITERATURE ON INSTITUTIONS AND ECONOMIC GROWTH

There is a long-standing tradition in the empirical growth literature to incorporate various measures of the quality of institutions as determinants of economic growth across countries. Thus, in Barro's (1997) seminal contribution to the empirical growth literature, two measures of institutional quality – political stability and the rule of law index – are included in the determinants of growth of GDP per capita. In Barro's empirical implementation of the neoclassical growth model, a higher degree of political stability and a greater presence of the rule of law have a positive effect on the investment rate, which leads to higher economic growth. However, a major weakness of Barro's work (and other similar studies such as Knack and Keefer [1995]) is the possibility of reverse causality – countries that grow faster will tend to adopt better institutions and be more politically stable. It is only with the two important papers by Acemoglu, Johnson and Robinson (henceforth, AJR, 2001, 2002) that a serious attempt was made to control for the possibility of reverse causality in establishing a causal role for institutions in economic development. Given the pioneering nature of the two AJR papers in the cross-country literature on institutions and economic development that have used quantitative methods, we provide below a summary of the key arguments and methods of the two papers.

To estimate the impact of institutions on economic performance that does not lend itself to interpretations of reverse causality, AJR need a source of exogenous variation in institutions. To do this, in their 2001 paper, they propose a theory of institutional differences among countries colonised by Europeans, and exploit this theory to derive a possible source of exogenous variation. Their theory rests on three premises; firstly, there were differences in colonization policies which created different sets of institutions. At one extreme, European powers set up 'extractive' institutions, exemplified by the Belgian conquest of the Congo; these institutions did not introduce much protection for private property, nor did they provide many checks and balances against government expropriation. The main purpose of these extractive institutions was to transfer as much of the resources from the colony to the colonizer and were detrimental to investment

and economic development. At the other extreme, many Europeans migrated and settled in a number of colonies where they tried to replicate European institutions, with strong emphasis on private property and checks against government power. These institutions enforced the rule of law and encouraged investment; primary examples of this include Australia, Canada, New Zealand, and the United States. Secondly, the colonization strategy was influenced by the feasibility of settlements; i.e. in places where the disease environment was not favourable to European settlement, the formation of extractive institutions was more likely. The final premise of AJR's theory is that the colonial state and institutions persisted after independence – this is because the political elite that came to power at independence in the previously colonised countries had a strong self-interest in maintaining the extractive institutions established during colonial times and the access to revenues obtained from the control of these institutions.

AJR validate their theory by regressing current economic performance (log GDP per capita in 1995) against current institutional quality (the average protection against expropriation risk for the period 1985-1995), and by instrumenting the latter by the settler-mortality-rate during the colonial period compiled by the historian, Philip Curtin. The settler-mortality-rate is an indirect measure of the disease environment in the colonies, and thus, measures the likelihood of Europeans settling in a particular colony and setting up institutions of private property. AJR find that there is a high correlation between the mortality rates faced by soldiers, bishops and sailors in the colonies and European settlements and early measures of institutions, and between early institutions and current institutions; AJR estimate large effects of institutions on income per capita using this source of variation. They also find that this relationship is not driven by outliers, and is robust to controlling for latitude, climate, current disease environment, religion, natural resources, soil quality, ethnolinguistic fragmentation and current racial composition.

While the AJR choice of instrument of current institutional quality – the settler mortality rate – can be justifiably defended as exogenous to current economic performance (except in its effect via institutional quality), there is still a legitimate concern whether the settler mortality rate is proxying for the effects of geography more than the effects of institutions, since countries with tropical climates are more likely to have adverse disease environments. According to the 'geography matters' hypothesis, geographical variables can have a direct effect on economic growth as climate and disease have negative effects on work effort and productivity. Geography may also matter indirectly, if areas in the tropics had an early advantage in the adoption of agricultural technologies, but later agricultural technologies such as the heavy plow, crop rotation systems, domesticated animals and high-yield crops favoured countries in the temperate areas.

To disentangle the effects of geography from institutions in determining economic performance, AJR in their 2002 paper ask the question: why are areas colonised by European powers during the past 500 years, that were relatively rich in 1500, now relatively poor? Examples of such 'reversals of fortune' are the Meso-America, the Andes, India and South East Asia – these civilizations are now considerably poorer than those located in North America, Australia, New Zealand or the southern cone of Latin America. According to AJR, the reversal in relative incomes is inconsistent with the simple geography hypothesis, which explain, the differences in economic performance across nations by innate geographical properties, such as distance from the equator; if climactic factors matter in determining economic performance now, they should have also mattered in 1500. AJR argue that a more sophisticated geography hypothesis, which takes the effects of geography on economic growth to be time-varying, does not find much support in their regression analysis, where economic prosperity in 1500 (captured by the degree of urbanisation and by the density of population in 1500) has a negative relationship with economic performance today, even when a wide range of variables capturing the time-varying effects of geography are included as independent variables. AJR also argue that the primary cause of the reversal of fortune among the former colonies was European colonization: European colonial powers established, or continued already existing, extractive institutions in previously prosperous areas and developed institutions of private property in previously poor areas. Thus, as in their previous paper, the argument here is that both 'bad institutions' and 'good institutions' set up by the colonizers in their colonies persisted to the current period and had a strong negative and positive impact on current economic performance respectively; they show this empirically using a sample of over 40 countries for which data on urbanization or population density for 1500 is available – first, they establish that the more prosperous areas in 1500 have weaker institutions today (measured by the average protection against the risk of expropriation) and secondly, they show that once institutional quality is introduced as an independent variable (instrumenting institutional quality by the settler mortality rate as before) to explain current economic performance, the measures of economic prosperity in 1500 seem to have no direct effect on current economic performance. This suggests that the reversal in economic prosperity reflects the effects of early prosperity working its way through the institutions introduced by the European colonists.

However, what explains the introduction of extractive institutions in the relatively prosperous areas and the introduction of institutions of private property in the relatively poor areas 1500? Why did the Europeans follow what is apparently a perverse colonisation strategy? AJR argue that the introduction of institutions resulted from the differential profitability of alternative colonization strategies in different environments:

'In prosperous and densely settled areas, Europeans introduced or maintained already-existing extractive institutions to force the local population to work in mines and plantations, and took over

existing tax and tribute systems. In contrast, in previously sparsely settled areas, Europeans settled in large numbers and created institutions of private property, providing secure property rights to a broad cross-section of the society and encouraging commerce and industry. This institutional reversal laid the seeds of the reversal in relative incomes.' (AJR 2002, pp. 1279)

Since the institutional reversal predated the opportunity to industrialize in the nineteenth century, there was significant path dependency with respect to economic performance, as the age of industry created considerable advantage for societies with institutions of private property.

Rodrik, Subramanian and Trebbi (henceforth, RST, 2004) have taken the AJR arguments and results forward in two ways; firstly, they introduce a third determinant of economic performance – integration. International trade as a driver of productivity-change is often seen as playing an important causal role with respect to economic growth, independent of geography and institutions; RST take geography, institutions and integration to be the three 'deep determinants' of economic prosperity across countries. The second contribution of their paper is that they embed the three explanations of economic performance within a broader framework that allows for reverse causality from growth to trade, from growth to institutions, and for the indirect effects of geography on incomes through integration and institutions. RST use AJR's settler mortality rate as an instrument for institutional quality and an instrument for trade proposed by Frankel and Romer (1999) – the trade/GDP ratio constructed on the basis of a gravity equation for bilateral trade flows. RST first estimate their model of economic growth (with the linkages between integration, geography and institutions as described above) using the 64 country sample of AJR 2001, followed by a 79 country sample which is largest sample that can be used while retaining the AJR instrument, and finally a 137 country sample, where the instrument for institutional quality is the fraction of populations speaking English and Western European languages (taken from Hall and Jones, 1999). RST find that institutions overwhelmingly trump integration, and do slightly better than geography in explaining cross-country variations in income per capita.

A criticism of the RST study is in the way it treats integration as a deep determinant of economic prosperity, independent of institutions and geography. It is difficult to see how integration can be viewed in this manner – after all, the extent to which countries engage with the international economy depends partly on geographical factors (landlocked ness, size of the country, and distance from major international markets) and partly on institutional quality (open-ness is partly a consequence of actions taken by national governments or as a part of structural adjustment programmes initiated by the Bretton Woods institutions, and is also dependent on the quality of the country's economic institutions). Thus, to propose integration as the third deep determinant of economic performance and then to find that it is trumped by institutions and geography is very close to setting up a 'straw man' argument for open-ness as an independent determinant of economic growth, only to demolish it.

Very recently, however, there has been growing criticism of the nature of the instrumental variable for institutional quality used in the AJR and RST studies. Albouy (2005) finds that the settler mortality data that forms much of the basis of the cross-country work on institutions is partly flawed and that when the AJR equations are estimated with revised mortality data, their results turn out to be less robust, less significant and suffering from 'weak instrument' pathologies.² Olsson (2005) argues that AJR's approach of treating the heterogenous colonization experiences of non-Western countries within a single historical framework is problematic, and finds that once the AJR sample of countries is disaggregated into Latin American, African and a combined Asian and Neo-European subsamples, the hypothesis of a link between disease environment and institutions is weak or rejected for the Latin American and African subsamples, but works well for the other remaining former colonies. Olsson argues that the reason the disease environment does not seem to have a clear negative relationship with institutional quality for the Latin American and African countries is because in the first case, when colonization occurred in the sixteenth and seventeenth centuries, institutions of private property had not yet been established in the colonist countries – Spain and Portugal in this case; thus, for the mainly Spanish and Portuguese colonies, the choice between extractive and productive institutions does not seem to have been in place. In the second case, with the African countries, colonisation occurred after 1885 when medical advances had dramatically reduced settler mortality in malaria and yellow fever and thus diminished the importance of disease environment for colonial policy.

Sachs (2003) shows that the geography does pretty well as an independent explanatory of income differences across countries if the risk of malaria is used as an instrument of malaria prevalence in regressions where the settler mortality rate instruments institutional quality. Glaeser et al. (2004) argue that out of the three measures of institutions that have been used in the current economic growth literature – risk of expropriation by the government, government effectiveness and constraints on the executive – the first two do not describe institutions, but are merely outcome variables that reflect the government's past restraint from expropriation in the first case, and its quality in the second. Thus, these measures do not code dictators who choose to respect property rights any differently from democratically elected leaders who have no choice but to respect them. As Glaeser et al. correctly argue, since these measures confound constraints on government with dictatorial choices, they do not proxy for institutions, which in

2. Among Albouy's many criticisms of the settler-mortality-rate used in AJR 2001, 2002, is that the data does not distinguish between mortality rates of soldiers at war (campaign rates) and at peace (barrack rates).

their essence are constraints. The third measure comes the closest in principle to capturing institutions, but in practice, given its volatility over time in developing countries cannot be plausibly interpreted to reflect durable rules, procedures or norms that exemplify institutions; this casts doubt on the AJR-RST view that the measures of institutions used in the literature are 'deep determinants' of economic performance. Glaeser et al. further show that in regressions which correlate economic growth with institutional capital, human capital remains a crucial omitted variable, and when included outperforms the AJR and RST measures of institutional quality. The final criticism of the AJR studies comes from RST themselves as they argue that use of the settler mortality rate as an instrument variable for institutional quality is simply to find an econometric way to identify an exogenous source of variation in the independent variable of interest and should not be seen to be laying out a full theory of cause and effect; in particular, the AJR 2001 paper cannot explain the large income differences between non-colonized high income countries such as Finland and Luxembourg on one hand and non-colonized low income countries such as Ethiopia and Yemen on the other.

The above criticisms of the AJR and RST papers can be broadly divided into three main sets of concerns. Firstly, the criticisms of the settler mortality rate suggest that it is a 'weak instrument' for institutional quality and that the search for the perfect instrument for the latter is far from over in the empirical growth literature; thus, until such an instrument is obtained, it is difficult to be convinced by the robustness of the results that establish a causal role for institutions in economic growth. Secondly, the Sachs paper in particular shows that, the geography versus institutions debate remains undecided – since institutional quality and geographical variables are so closely correlated (the same countries that have poor institutions have poor climatic factors and disease environments), it may be very difficult to disentangle the effects of the two sets of variables on economic performance. Finally, the Olsson, Glaeser et al. and RST criticisms of the AJR studies suggest that the differences in economic prosperity that we witness around the world cannot simply be attributed to the institutions left behind by European colonization, in fact, the Glaeser et al. paper reminds us that it is indeed possible to view the effective functioning of institutions as a consequence of strong economic growth driven primarily by human capital accumulation, and not the other way around. On a more general note, the weaknesses of the AJR and RST studies suggest that cross-country econometrics may not be the best route to follow in attempting to establish that institutions matter for economic development. With respect to the instrumental variable issue, it is doubtful whether there is indeed any variable that is not correlated with economic growth and is at the same time correlated with institutional quality, given the endemic problem of 'weak instruments' that plague the empirical literature on institutions and economic growth. In addition to the specific problem of reverse causality in the institutions and growth literature, there are two additional limitations of cross-country econometrics that has recently led to a re-evaluation of the potential benefits that cross-country econometric methods bring in the understanding of the determinants of economic growth. Firstly, cross-country regression analysis is based on the implicit assumption of 'homogeneity' in the observed relationship across countries – this is a very restrictive assumption – as RST themselves note, 'desirable institutional arrangements have a large element of context specificity arising from differences in historical trajectories, geography, political economy or other initial conditions'(p. 22); the considerable variations among developing countries in relation to various structural features and institutional aspects that have a direct bearing upon the impact of institutions on the growth process imply that attempts to characterize the 'average' developing country in terms of a cross-country regression is unlikely to yield sensible results. Secondly, differences in the quality of data across countries makes cross-country econometric methods problematic (Srinivasan 1994); it is not only the statistical procedures for measuring economic growth and its possible determinants, but also in the magnitudes of errors in the data in the implementation of these procedures, that varies significantly among countries.

A final limitation of the cross-country econometric literature from the IPPG's perspective is that it examines the role of institutions in bringing about economic growth, *not* pro-poor growth; this limitation has been remedied to some extent by a recent study by Kraay (2005), which is perhaps the first study of its type to use cross-country econometric techniques to investigate the correlates of pro-poor growth. Kraay examines the determinants of both absolute and relative pro-poor growth, for absolute pro-poor growth, Kraay uses the average growth rate of household income/consumption and for relative pro-poor growth, Kraay uses two different measures – the average annual proportional change in the Gini index and the discrete-time component of the change in headcount poverty. Using 285 household surveys for a sample of 80 developing countries conducted in the 1980s and 1990s, Kraay correlates the pro-poor growth measures with initial income, the rule of law index, openness, and government consumption. As in the literature on the empirics of economic growth, the rule of law index (a measure of institutional quality) is found to have a positive and significant effect on absolute pro-poor growth, however, the rule of law index does not have any discernible effect on relative pro-poor growth. Kraay concludes by stating that 'country-specific research using household level data is likely to shed more light on the forces driving relative income changes that matter for poverty reduction'(p. 24), which again points out the limitation of cross-country econometrics for the purpose of understanding the institutional determinants of pro-poor growth.

INSTITUTIONS AND PRO-POOR GROWTH: THE KEY HYPOTHESIS THAT QUANTITATIVE ANALYSIS CAN ADDRESS

If cross-country econometric methods do not offer a satisfactory way forward for quantitative work in the IPPG programme, then how do we proceed? There are clearly two ways of doing so – within country analysis of institutions and PPG using regions/states as units of analysis, and the analysis of the institutional constraints on the growth of investment and production activities of firms and producer households; we call the first macro-analysis and the second micro-analysis of institutions and PPG. Before we examine what kind of empirical work has been done in these two areas, and what the gaps are, we need to step back for a moment and ask what kind of questions should drive the empirical research in the IPPG programme when we use regions/states or households/firms as units of analysis. First, let us reflect on the three defining questions of the research programme:

- How are institutions that affect economic growth and its distribution established, sustained and changed?
 - What determines their effective functioning? How is this related to the social, cultural and political matrix from which they arise, and in which they operate?
 - How do institutional interactions influence economic growth, the pattern of growth and, specifically, the possibilities for pro-poor growth?

Of the three questions above, the ones amenable to quantitative analysis are the second and third questions, the first question, in our view, clearly belongs to the domain of political economy, and is best addressed with historical analysis and qualitative methods. The second and third questions relate to the functioning and effects of institutions respectively and econometric methods can help to provide precise and robust answers to these two questions (though such methods can be usefully complemented by qualitative methods in certain contexts). Consider the second question in more detail: what do we mean by the effectiveness of the functioning of institutions? How do we know whether institution X is functioning better than institution Y? What specific criteria should an institution fulfill to be considered as functioning adequately? New institutional economics (NIE) (and the work of Oliver Williamson, in particular) provides us with a framework of analysis to answer these questions; in NIE, institutions are transaction-cost-minimizing organizations (governance mechanism, in Williamson's terminology) that emerge as a response to the three dimensions of transactions – asset specificity,³ uncertainty⁴ and frequency. In this framework, the *quality* of transactions is equally as important as the quantity of transactions, better functioning institutions not only allow a higher number of transactions to take place, they also allow for more complex transactions: for example, if a firm decides to no longer ask for immediate payment from its customers and is willing to defer the payment, this is an increase in the complexity of the transaction, hence in its quality.

Two points should be noted about Williamson's NIE: firstly, transactions *do not have to be market-based* – they may occur within vertically integrated organizations or hierarchies (banks, firms, government agencies and parastatals are all examples of hierarchies); both markets and hierarchies have certain advantages and disadvantages in minimizing transactions costs, and the efficacy of one institution over another in increasing the frequency and quality of transactions would depend on country-specific factors, and on the nature of the transaction itself. Secondly, institutions may be *formal or informal*: formal institutions are the court system, written contracts, and so on; informal institutions are usually hybrids – that is, combinations of markets and hierarchies – social and business networks, business groups, a set of firms linked to the one another by the control of a single family are all examples of informal institutions. There is no priori reason that formal institutions would do better in governing the quality of transactions than informal institutions – for example, in the pooling of risk in agricultural activities, informal institutions (kinship based networks) may do better than formal institutions (government provided safety nets). However, Williamson has argued that with better functioning formal institutions, informal institutions (which suffer from diseconomies of scale and scope) may eventually die away – for example, with more improved legal systems, social-network-based enforcement of contracts may be less likely to persist.⁵ This would suggest that formal institutions and informal institutions are *substitutes*, and that with the emergence of the former, the latter will wither away; however, it is also possible that informal institutions can *complement* formal institutions – for example, the presence of social networks may allow formal

3. A specific asset is one that is more valuable when applied to a specific pair of trading partners than it is to trade with an alternative buyer or seller. Williamson (1996) suggests six types: 1) site specificity, 2) physical asset specificity, 3) human asset specificity, 4) dedicated assets, 5) brand name capital, 6) temporal specificity. There are (in principle) no contractual problems with non-specific investments. In that case, one party can not be 'held up' by the other, because alternative trading partners can be found with no loss of the value of the investment. (Steer, 2005)

4. There are two types of uncertainty. Uncertainty can be defined either as *environmental* uncertainty, which refers to changes in the circumstances surrounding exchange, or *behavioural* uncertainty, which refers to opportunistic behaviour (which includes purposeful disguise and distortion of information).

5. This is where there is an important difference between Douglas North and Oliver Williamson. In Williamson's NIE, governance mechanisms evolve to adapt to different transactions technologies – that is, an institution will cease to exist if the functions it fulfils can be better done by another institution when more complex transactions replace simple ones. North, on the other hand, argues that ideology rather than rationality may determine which institutions survive, and there is a path-dependence to institutional change.

contract enforcement mechanisms such as courts to function more effectively. Though this has not been necessarily argued by Williamson, it should be clear that more complex transactions should reflect, and be causal to, processes of economic growth

If these transactions characterize the economic activities of 'small farmers', and small and medium enterprises in particular, it can be argued that the emergence of governance mechanisms that allow an increase in transaction quality in the sectors and activities that are most likely to contribute to PPG will lead to the process of PPG itself – *thus, an improvement in the functioning of institutions with respect to transactions quality, particularly those relating to small enterprises and smallholder agriculture, should necessarily lead to an achievement of PPG*. For example, in the manufacturing sector, the emergence of well functioning dispute-settlement procedures may allow firms to offer trade credit to their suppliers, and ease financing constraints on investment for these supplier firms (which in reality, are likely to be small firms supplying specialized intermediate inputs to the larger firms producing final goods). In the agricultural sector, the existence of vertically integrated exporters – firms which provide inputs on credit to farmers, supply them with research and extension and finally purchase their output at the end of the harvest period – may lead to a lower incidence of problems with quality control, credit access, input provision and the marketing of crops. The vertically integrated firm has an interest in investment in quality control, and in research and extension to maintain the quality and yield of the crop that the farmers will be selling to them, which may not be evident in a system where there are many buyers of the farmers' produce and suppliers of inputs and credit (see the Annexe to the Tanzania study for a more detailed discussion of these issues). Thus, in this example, a well-functioning hierarchy may bring about a higher quality of transactions than a market-based system, and consequently, increase productivity and growth in the smallholder agricultural sector.

In the African context, Fafchamps (1999) has convincingly argued that the absence of large well-functioning hierarchies has led to a greater reliance on markets for transactions to take place, though at the same time, there is a lack of institutions that allow markets to function effectively. Fafchamps gives the example of the absence of quality verification by the government which leads to a wide variance in the quality of products produced by African firms, and consequently, a decline in transaction quality; missing or poorly functioning market institutions make 'market exchange costly, cumbersome, time consuming and unpredictable' (1999, p. 10), with particularly negative implications for the economic activities of farmers and small firms, who cannot invest in alternate mechanisms that may circumvent the 'missing institution' problem – for example, in the case of quality certification, large firms can obtain ISO accreditation because they have the resources to upgrade their products to the requisite standards.

The above framework allows us to ask the following two questions with respect to effectiveness of institutions:

1a) What determines when *markets* work better than *hierarchies* (and vice versa) in enhancing the quantity and quality of transactions?

1b) How do *formal* and *informal* institutions interact in the process of PPG? Are they substitutes or complements in their effects on PPG?

Turning now to the third defining question of the research programme, the questions for the quantitative analysis seem fairly straightforward in this case:

2a) How do institutions (or institutional quality, in particular) matter in bringing about PPG?

2b) How do changes in institutions affect PPG?

Questions 1a, 1b, 2a and 2b will be the four questions driving quantitative analysis in the IPPG programme. In the next two sections, we will explore how macro-level and micro-level analyses of institutions can address these four questions (see also Figure 4 which refers to three sets of research hypotheses – RH – in the IPPG programme).

MACRO-ANALYSIS OF INSTITUTIONS AND PRO-POOR GROWTH

There are various possible quantitative approaches to the macro-modelling of the effects of exogenous factors, such as institutions, on pro-poor growth, these can be categorised into:

- CGE modelling describing the key relationship amongst variables, linked to social accounting matrices to get to the effects on poor households
- Partial equilibrium modelling, describing one particular relationship at various levels: international, national, state and firm level.

The building of CGE models is very time consuming and further existing CGE models for developing countries do not tend to include institutions in a meaningful way – there are more straightforward opportunities by using partial equilibrium modelling, but these need to avoid, as much as far possible, the disadvantages associated with cross-country models identified above.

Partial equilibrium modelling can be done at the:

- National or cross-country level
- State level, within countries
- Firm (or household) level studies.

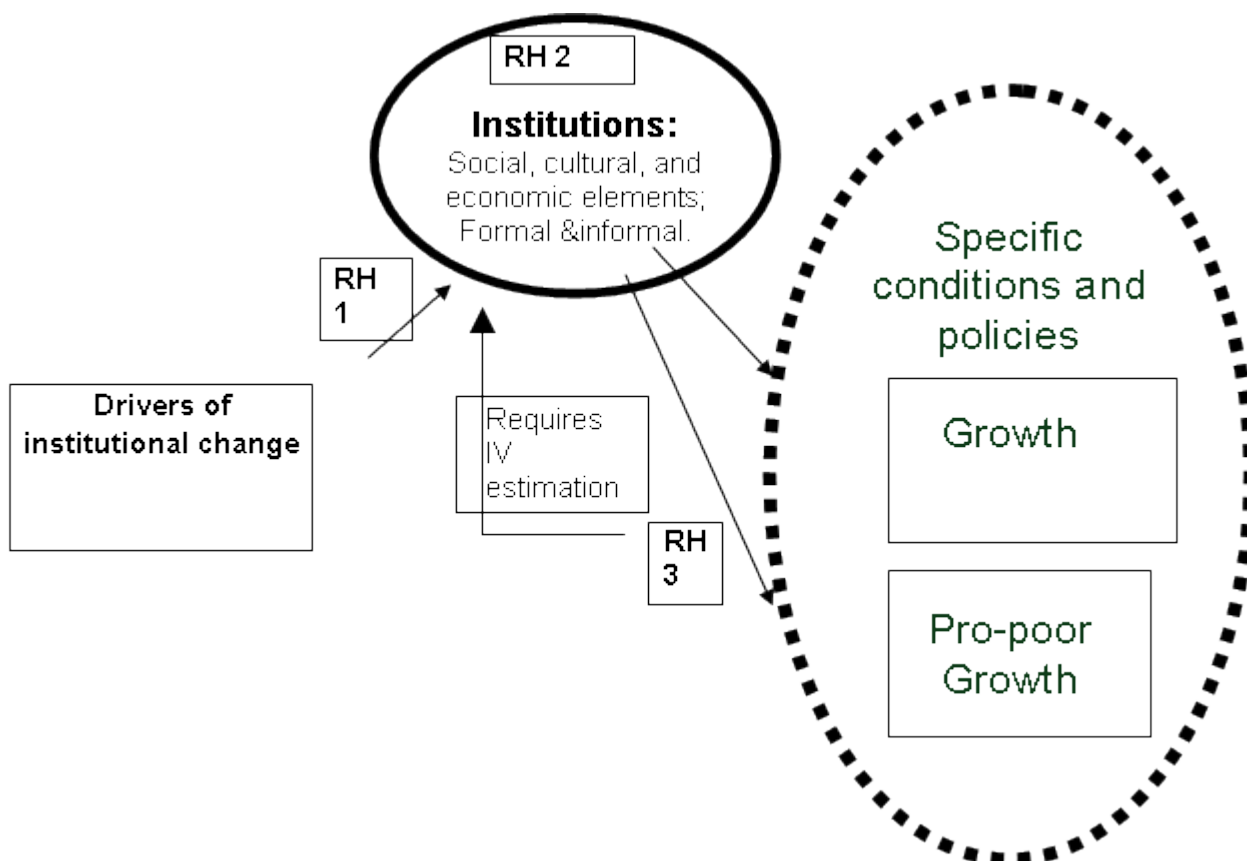


Figure 4. Three research hypotheses in context

In this section, we will briefly discuss types of studies that can be usefully undertaken at the national or state/region levels, after reviewing CGE modelling.

CGE modelling

This route is not very promising for the study of institutions and pro-poor growth. There are only a few OPPG studies that go beyond describing analytically the components of growth and poverty reduction by providing a quantitative assessment of the relationship between growth, income distribution and poverty reduction. In particular, two of the studies (Klasen et al., 2004 and Thurlow and Wobst, 2004) build general equilibrium models to estimate the potential impact of different scenarios on pro-poor growth – we review these here and note that institutions are not included explicitly.

Klasen et al. (2004) develop a computable general equilibrium model (CGE) for Bolivia to evaluate how external shocks and policy reforms might affect the growth path and poverty reduction in the Bolivian economy. They employ a dynamic long-run model (with no short-run Keynesian multiplier effects), which combines neoclassical (e.g. production structure and factors' markets) and structuralist features (e.g. segmented labour market); economic growth is determined by changes in endowments of the primary factors (labour, capital) and the efficiency by which these are employed (TFP) in a typical neoclassical growth specification; TFP is assumed fixed (at 2% level), so growth is driven entirely by labour dynamics (i.e. population changes and migration) and capital accumulation (i.e. net capital inflows and domestic savings).

As is typical for CGE models analysing growth and poverty, the CGE model is linked to household survey data. The rationale for this linkage is provided by household income, which in the model is split up into individual factor incomes (identified by the household distinctive factor endowments): household net interest income, and household public transfers.⁶ The model is then calibrated using a social accounting matrix (SAM), which records the transactions between the sectors, production factors and economic agents.

Klasen et al. (2004) simulate the effects of various external (e.g. decrease in capital inflows, adverse climatic conditions, terms of trade shock) as well as internal shocks (changes in macro policies) on growth and poverty measures; more importantly, the authors simulate the effects of structural reforms on the Bolivian economy. Such reforms are modelled as exogenous modifications of a specific parameter, in particular, two public reforms are considered: labour market and tax reform. The former consists of a deregulation of the labour market, which makes it easier for urban informal employees to be employed in the formal sector as unskilled workers; the shock is modelled by allowing some migration from the informal

6. In the model each individual factor in the household survey is scaled up or down according to the CGE results for the production factors owned by households. This is how changes in real factor prices in the CGE model affect the distribution of income. The remaining two components of household income and the changes therein are given by household groups in the CGE model.

into the formal sector, thus narrowing the wage differentials between the two labour markets.⁷ The impact of this reform occurs in the simulation through a rise in rural-urban migration, which increases income per capita in traditional agriculture, moreover, economic growth benefits from efficiency gains achieved by reducing labour market segmentation; this higher growth determines a decrease in urban poverty (relative to the baseline scenario), with only modest distributional shifts (lower income of formal workers offsetting the higher income in the informal sector), inequality declines in the rural sector due to the gains of the smallholders. The effects of different tax reforms, combining changes in income and indirect taxation, are also simulated in the study.⁸ The changes operate via the traditional channels – income and substitution effect and shifts in the production structure – a revenue-neutral tax reform is expected to give the best result in terms of growth, with positive outcome in terms of poverty reduction as well.

Thurlow and Wobst (2004) perform a similar simulation to assess the poverty and distributional outcome of alternative development strategies in Zambia, another OPPG study, they use a recursive dynamic CGE model as well, whose results are transmitted to the micro-level household survey similar to Klasen et al. (2004). The authors simulate alternative types of growth path (copper-led growth, agriculture-led growth and non-agriculture-led growth in formal sectors other than mining) to study their effect on growth rate, income distribution and poverty at a geographical level; the different scenarios are modelled through exogenous changes in the specific parameters: increase in the world demand for copper, increase in TFP in the agriculture or non-mining secondary sectors. Despite being very detailed,⁹ the model does not delve into the impact of specific policies on the economy, however, by identifying the channels through which poverty may be affected under alternative scenarios, it may provide a useful tool to understand how institutional constraints may affect pro-poor growth.

The main challenge for anybody interested in analysing the effects of institutions on pro-poor growth through CGE models is how to incorporate institutions. The above examples really estimate the effects of policy changes on growth and poverty, however, following the lines of Glaeser et al. (2004), policy choices do not necessarily reflect institutions, which are more correctly thought of as constraints to or enablers of policy making; therefore it is disputable whether modifications in labour market regulation of the type modelled by Klasen et al. might be considered as institutional change. On the other hand, in as much as the set of rules that governs the labour market represent an institution, changing those rules could be considered an institutional change; in that view, (labour market) institutions can be included in CGE models.

There are further concerns in trying to model institutions in quantitative simulations. Introducing institutions into CGE models would often require the incorporation of the effects of institutional changes on the different markets, which is exactly the information one would like to deduct from the simulation rather than build it in the model – further, it is very difficult to describe how institutions change. Klasen et al. (2004) acknowledge the complexity of including institutional changes in such a modelling exercise and rely on evidence from secondary sources for their analysis of institution and pro-poor growth in Bolivia. Most CGE models are basically neo-classical models where markets are clear and where there is no space for the effects of institutions. However, estimated equilibrium models may include the effects of institutions in certain key relationships – for instance – a CGE model could model a wage bargaining curve that depends on the institutional set-up surround wage bargaining, such as unions, or it could include a price mark-up depending on the institutions enforcing market competition; so it would, in theory, be possible to build institutions in CGE models, however, the main problem is that it is very time consuming and existing CGE models for developing countries have not tended to include institutions in a meaningful way, so they would need to be incorporated afresh.

Partial equilibrium modelling, exploiting national data

Partial equilibrium modelling examines how a certain variable depends on a set of explanatory variables – the model is made explicit, based on economic theory, and it then assumes and estimates generalities in certain types of behaviour, across time, countries, regions or sectors. Regressions are simply a tool to handle economic relationships that are more complex than people can handle visually (e.g. multi-explanatory explanatory variables in parametric or non-parametric regressions as opposed to simple correlations between two variables in charts). Existing cross-country econometric studies have been criticised in Section three, but there are ways to meet some of these criticisms through the use of appropriate econometric techniques. One important element of the criticism is that the variation in outcomes across countries cannot fully be explained by the variation in institutions across countries *alone* (perhaps because institutions operate in their own national setting); this may indeed be so, perhaps because while the effects of institutions may not be compared across countries, it is more reasonable to assume that institutions can be compared across regions, time and perhaps across sectors. Fortunately, modern panel data analysis allows for country specific relationships, e.g. seemingly unrelated regression

7. In particular, in the experiment, the extent of the migration is calibrated so as to reduce the wage differential between the two labour markets by about 50 per cent.

8. The alternative taxes are both simulated by directly changing the tax rate parameter in the mode.

9. The Thurlow-Wobst model takes explicitly into account the geographically dimension of the model, by distinguishing production across nine provinces. So for instance the model distinguishes between 243 activities, accounting for 27 sectors in nine provinces.

(SUR) panel-estimates allow country specific relationships, but connected only through the error term (e.g. unobserved shocks such as 9/11; asian crisis/droughts). The use of *heterogeneous* panel data allows one to actually test whether there are significant differences in the effects of institutions across countries, and the use of *dynamic* heterogeneous panel data allows handling econometrically the problem of endogeneity (GMM estimators, or using lags), though perhaps not always very satisfactorily; thus, the use of appropriate econometric techniques can help to overcome some challenges with country regressions based on national level data – explicitly including heterogeneity in country relationships would be a good start; the dependent variable would need to be the incomes of the poor or some other indicator of pro-poor growth.

One way of understanding causes of pro-poor growth at the national level is by dividing the labour force in to more skilled and less skilled workers and assuming that the plight of the poorest and pro-poor growth is related to the (growth) incomes of the less-skilled workers. As factors of production, they enter in to a production framework (for 2 or more factors) and the effects of institutions on their remuneration or productivity can be incorporated. The supply and demand framework can be represented by a two-factor CES production function with low-skilled labour (U) and skilled labour (S) following Katz and Murphy (1992).

$$f(U_t, S_t) = \left\{ (\eta_U U_t)^\rho + (1-\eta_U) (\eta_S S_t)^\rho \right\}^{\frac{1}{1-\rho}} \quad (1)$$

where $\eta_U \equiv h_U$ and $\eta_S \equiv h_S$ are functions of labour efficiency units, and the parameter $\rho < 1$, the labour efficiency index can be interpreted as accumulated human capital or the skill-specific technology level; the elasticity of substitution between U and S is $\sigma=1/(1-\rho)$. In neo-classical theory, the technology level changes exogeneously, however, it is perfectly possible to have shifts in the pattern of technical change or factor price mark-up, dependent on such factors as institutions.

Te Velde and Morrissey (2004) use such as set-up to examine the effects of inward FDI on productivity and incomes of less skilled workers in Latin America, and Te Velde (2004), for the effects of unions on productivity and incomes of less skilled workers in Latin America. These papers assess how FDI can cause equitable growth, but here we will present equations with measures of institutions (INST). By estimating a wage equation for each group of workers jointly with cross-equation restrictions imposed on σ . It thus estimates the following equations, with P a price deflator and Y is real GDP

$$\ln\left(\frac{w_U}{P}\right)_t = \ln(\eta_U) - \frac{1}{\sigma} \ln\left(\frac{U}{Y}\right)_t + \frac{g_{1U}(\sigma-1)}{\sigma} t + \frac{g_{2U}(\sigma-1)}{\sigma} INST_t + e_{1t} \quad (2)$$

$$\ln\left(\frac{w_S}{P}\right)_t = \ln(1-\eta_U) - \frac{1}{\sigma} \ln\left(\frac{S}{Y}\right)_t + \frac{g_{1S}(\sigma-1)}{\sigma} t + \frac{g_{2S}(\sigma-1)}{\sigma} INST_t + e_{2t}$$

Equations (1) and (2) can then answer two important questions. First, we can test whether changes in type or quality of institutions lead to a rise in the relative wage of skilled workers, i.e. $\gamma_2 > 0$ in (1) or $\gamma_{2S} > \gamma_{2U}$ in (2). Secondly, we can test whether institutions raise wages and productivity of (low-) skilled workers in the absolute sense, i.e. $\gamma_{2S} > 0$ ($\gamma_{2U} > 0$) in (2). This leads to the following hypotheses:

1	$\gamma_2 > 0, \gamma_{2S} > \gamma_{2U}$	$\gamma_{2U} > 0$	INST raises skilled wages more than low-skilled wages, thereby raising inequality
2	$\gamma_2 > 0, \gamma_{2S} > \gamma_{2U}$	$\gamma_{2U} < 0$	INST raises skilled wages and reduces low-skilled wages, thereby raising inequality
3	$\gamma_2 < 0, \gamma_{2S} < \gamma_{2U}$	$\gamma_{2S} > 0$	INST raises low-skilled wages more than skilled wages, thereby reducing inequality
4	$\gamma_2 < 0, \gamma_{2S} < \gamma_{2U}$	$\gamma_{2S} < 0$	INST raises low-skilled wages and reduces skilled wages, thereby reducing inequality

Similar types of studies have been done for Latin American, including Bolivia and East Asian countries. More detailed studies may be useful.

Partial equilibrium modelling, exploiting state level data

Another promising route in identifying the linkages between institutions and pro-poor growth appears to be used by an increasingly relevant empirical literature (particularly based on India), exploiting the 'exogenous' nature of some policy experiments within a country to disentangle the institutional effects on economic performance; an important part of this literature is reviewed in the Indian OPPG case study (Besley et al., 2004). The basic idea of these studies is to use state level panel data for the post-independence period, exploiting the fact that states had different initial conditions and received different policy treatments after independence; this provides an ideal testing ground (relative to cross-country studies, which do not control for unobservable country-specific factors) for looking at how policy regimes

and initial conditions affect pro-poor growth.

These studies can specifically address questions 2a and 2b of Section three – Do institutions matter in bringing about PPG? And how do institutional changes affect PPG?

Besley and Burgess (2000) analyse the impact of land reform legislation on poverty reduction and growth by constructing a state-wise cumulative land reform variable on the basis of legislation acts passed by individual state's governments;¹⁰ they perform a number of fixed effects regressions for the sixteen major Indian states between 1958 and 1992, using a standard panel data baseline specification

$$p_{st} = \alpha_s + \beta_t + \gamma X_{st} + \phi l_{st-4} + \varepsilon_{st}$$

where p is some measure of poverty (distinguishing between urban and rural), α is a state fixed effect, β is a time dummy, X is a set of controls (including state taxes, population growth rate, social public expenditures) and l is the cumulative land reform variable, for state s at time t . The model is estimated through GLS and the error modelled as AR(1) process with a state-specific degree of autocorrelation:

$$\varepsilon_{st} = \rho_s \varepsilon_{st-1} + u_{st}$$

The authors also try to circumvent the possible endogeneity concerns on the land reform variable by using two instrumental variables (land reform variable lagged four years and the share of seats won by left parties in state elections), which may not be entirely convincing.

The main finding is that land reform does have a significant negative impact on poverty (ϕ is significantly negative), but this result is driven by increased security of tenancy contracts and the abolition of intermediaries between tenants and landlords, rather than by the actual land redistribution. This findings point to the role that institutions such as secure contracts and property rights have in providing the right incentives for pro-poor growth.

The authors employ also a growth equation similar to that used in the cross-country growth literature:

$$y_{st} = \lambda y_{st-1} + \alpha_s + \beta_t + \gamma X_{st} + \phi l_{st-4} + \varepsilon_{st}$$

where y is log of real state income per capita, and lagged income is included to model dynamics over time. The result of the growth equation suggests no significant influence of land reform on state GDP growth.

A further innovative methodology is used by Banerjee and Iyer (2005), who analyse the historical institutions set up by the British to collect land revenues in India; they find that districts, where land revenues were collected by landlords under the British rule, have significantly lower agricultural productivity, investments in public goods and agricultural investments in the post-independence period, than districts where revenues were collected by the state directly from the cultivators. The robustness of this finding is also guaranteed by the exogeneity of the type of land system under the British rule, which was chosen independently from the characteristics of the district. In order to control for possible endogeneity issues, the authors use also an instrument for the land tenure type: a dummy for whether the district was conquered by the British in the period 1820–1856, because of ideological changes on the land system issue, all districts conquered after 1820 ended up having mostly non-landlord systems, except for the policy reversal in the Oudh region after the revolt of 1857. Banerjee and Iyer also control for possible omitted variables by considering only districts which share a common border and have different land systems. The authors argue that the difference between the two types of districts in post-independence performance is likely to be related to the historically higher inequality of assets in landlord areas, which lead to a demand for redistribution. This was often pursued through higher levels of social conflict and *ceteris paribus* fewer public goods than non-landlord districts (where the main demand to the local state was productivity-enhancing public investment). Such neat findings support the idea that historical property rights institutions may have long-lasting effects (over 150 years in this case) on the way economic performance may evolve and be shaped. Further to this Banerjee, Gertler and Ghatak (2002) exploit the quasi-experimental nature of a major tenancy reform programme in West Bengal (operation Barga) to study its effects on farm productivity; the reform allowed tenants to be entitled to permanent and inheritable tenancy rights on the land they sharecropped as long as they paid at least 25 per cent of their output to the landlord. In measuring the impact of the reforms, the authors use a difference-in-difference method using district-level panel data with two types of regressors: a time dummy to measure the policy change, using Bangladesh (which has a similar type of land but no reform) as a control; and the share of registered sharecroppers in a district as a measure of program intensity. The results suggest that Operation Barga can explain more than one fourth of the subsequent growth of agricultural productivity in West Bengal.

India provides further studies of similar nature, e.g. on the relation between media presence and government responsiveness to natural disasters (Besley and Burgess, 2002); on the relation between labour market regulation and economic performance (Besley and Burgess, 2004); and on the impact of the "right" business environment on plant-level productivity (Lall and Mengistae, 2005), though such studies can only be done if state level data is available (mainly for bigger countries).

10. The land reform legislation is divided into four areas and each single act may belong to one or more areas.

MICRO-ANALYSIS OF INSTITUTIONS AND PRO-POOR GROWTH

We now review empirical studies that have examined the relationships between institutions and some measure of pro-poor growth, and between institutions and transactions quality using either firms or households as units of analysis.

Producer-Households: Among the economic institutions that matter to the economic activities of producer-households, property rights with respect to land has received the most attention in the empirical literature. The standard question asked here is whether the nature of the land tenure system makes a difference to farmers' investments, from a new institutional economics perspective, secure land rights would provide an incentive for farmers to invest in their land as they are assured of obtaining future returns to their investments; as we have seen in the previous section, land reform in the form of greater security of tenancy contracts had positive outcomes on poverty reduction and agricultural growth in India (and West Bengal in particular), secure land rights also allow farmers to obtain credit from formal financial institutions as the latter set of institutions are more likely to accept land as collateral where there are clearly defined rights to land.

As discussed in Annexe I, it is not clear whether individual land tenure systems (freehold or leasehold) are associated with higher investment on the part of farmers as compared to communal land tenure systems, and therefore, higher agricultural productivity. The empirical evidence on this seems to be mixed, however, most studies that have been undertaken in this area are likely to be econometrically flawed. It is not clear whether these studies control for all important variables that may affect farmers' investments and land productivity (agroclimatic factors for example), and they may also suffer from the problem of reverse causation – more productive land may be titled first, as compared to less productive land. Perhaps the most definitive study in this area is Besley (1995) which looks at two regions in Ghana – a region in the West of the country where most plots of land is owned rather than leased or rented; and a region in the East of the country, where most plots of land are not owner-operated. Besley measures the security of land rights by the ability of farmers to transfer these rights, whether to sell, rent, bequeath, pledge, mortgage or gift. Crucially, Besley allows for the possibility that land rights may be endogenous to the farmer's investment decision by instrumenting the land rights, variable with variables that may influence land rights but will not affect investment. The results provide some support for the hypothesis that secure land rights lead to higher investment, but also indicate that the security of land rights are to some extent endogenous to economic activity (see the Mali study for a discussion of the anthropological literature on the reasons behind the endogeneity of land rights, as well as the studies surveyed in the Annexe to this study).

In our view, there is scope for undertaking fresh quantitative work that can address the link between land tenure and investment/productivity in the Sub-Saharan African context which use more robust econometric methods and better data-sets. *Such work can address questions 2a and 2b of the quantitative analysis.* Specifically, if there is panel data available for households for two or more countries (or regions within countries) where there are differences in land tenure systems, then such data may allow for the econometrician to control for reverse causality and omitted variables using a difference-in-difference method (an excellent example of the value of this method in the context of land tenure changes is the Banerjee, Gertler and Ghatak paper on land reforms in West Bengal). In a standard difference-in-difference estimation, a variable Y is regressed against a vector of variables X, a time dummy T and a treatment dummy D as follows:

$$Y_{it} = a_1X_t + a_2T + a_3T.D,$$

Where D is 1 for the region/country that has undergone a change in land tenure (from communal to individual land tenure) and D is 0 for the region/country that has not (i and t are household and time subscripts); Y could be land productivity, household income, or consumption; T captures the change in Y due to exogenous reasons (say, the exogenous part of technological progress in the case of land productivity). To capture unobserved omitted variables such as land quality, the two regions/countries should be as close to each other in agroclimatic terms as possible (as in the Bangladesh-West Bengal comparison in the Banerjee et al. paper), a positive and significant coefficient on D would imply that the land tenure change has had a positive effect on the variable of interest. This framework can also be used to examine land titling initiatives (the De Soto initiative, for example) and their effects on the economic activities of small and micro-enterprises in urban areas; thus, one can examine whether land titling and registration leads to greater access to credit on the part of small and micro-enterprises and therefore, allows them to invest more and grow. With land titling in urban areas being implemented or being seriously considered by many countries in Africa, this may provide an excellent case-study to analyse in the IPPG programme.

Land tenure is not the only institution that matters to farmers. For countries in Africa and South Asia, marketing institutions, the provision of local level public goods and decentralization initiatives are all important for rural economic growth – again, differences across and within countries in the form and functioning of these institutions allow us to construct interesting case-studies that can address the questions we have put forward in Section Three. For example, if we see differences in the *form* of institutions across countries – say, in the case of marketing institutions, a parastatal or a private

monopsonist versus a deregulated system with many players (hierarchies versus markets, in Williamson's NIE framework) – we can test specific hypotheses about what we may expect with respect to the quality of transactions in these two institutional structures (see the Annexe to the Tanzania case-study for some preliminary hypotheses). If we see differences in the *functioning* of institutions – say, differences in the co-operation in water management within countries or in the ability of local government to provide rural infrastructure – we can then investigate what the economic and political determinants of these may be, for example, Bardhan finds that inequality in land holding has a large negative effect on co-operation by villagers in water management using survey data from Southern India; Chattopadhyay and Duflo (2004) find that mandated political representation of women in local government (gram panchayats) in the states of Rajasthan and West Bengal in India leads to the greater provision of certain local public goods which are more closely linked to women's concerns – drinking water and roads in West Bengal and drinking water in Rajasthan. *Thus, work along these lines can address questions 1a and 1b of the quantitative analysis.* So far in the literature, much of the empirical material has come from India, an important contribution that the IPPG programme can make is to conduct empirical work for other countries, especially from Sub-Saharan Africa.

Firms

The relatively little quantitative analysis for developing countries that one has seen using the Williamson NIE framework has been to do with firms, rather than households, as units of analysis. Let us first examine what kind of empirical work can be done with firm-level data to address questions 1a and 1b of section Three.

Are formal and informal institutions substitutes or complements?

The classic paper in this area is McMillan and Woodruff (1999); the authors investigate whether informal institutions (in the form of business networks or private information gathering and monitoring by firms) fill the void left by the lack of formal institutions in a transition economy – Vietnam, specifically, the lack of legal enforcement of contracts. The authors undertake a primary survey of 259 nonstate firms in Hanoi and Ho Ci Minh City during 1995-1997; the quality of the transactions is captured by the degree of trade credit offered – the fraction of the payment made after the delivery of the goods and the paper finds that trade credit tends to be offered when it is difficult for the customer to find an alternative supplier; when the supplier has information about the customer's reliability either through prior investigation or experience in dealing with it; and the supplier belongs to a network of similar firms. Thus, informal institutions exist in Vietnam and their presence ensures that complex transactions such as the offer of trade credit are undertaken, accordingly in this case, (as argued by Williamson) private ordering mechanisms emerge to allow contracting without laws in Vietnam. Steer (2005) undertook a re-survey of some of the McMillan-Woodruff firms, along with some new firms added to the original list, to extend the McMillan-Woodruff analysis to other characteristics of transactions quality – the willingness of firms to invest in specific assets in order to meet the order of some of its customers, and the customization of goods especially at the customer's request. Both these characteristics suggest complex transactions as the firm can suffer serious loss if the customer does not purchase the good at a later date. Running probit models, Steer finds that both formal written contracts and social networks matter in the firm's decision to invest in specific assets, and the belief that courts will settle a dispute along with social networks matter in determining a firm's decision to produce customized goods. The message from both the papers is that informal institutions can be substitutes to formal institutions in determining the quality of transactions, and in allowing firms to take more risks than they may have taken in the absence of informal institutions. However, Johnson, McMillan and Woodruff (2002) provide a different answer to this question when they examine firm behaviour in post-communist countries: using a survey of 1480 firms in five transition economies of Eastern Europe, the authors find that belief in the effectiveness of courts has a significant positive effect on the level of trust shown in new relationships between firms and their customers. In this case, formal and informal institutions are complements, and one would not be able to function effectively without the other.

How does institutional quality affect PPG?

The issues one can examine here are the institutional constraints to the investments and growth of enterprises, especially those that are small in size. A seminal paper in this area is Johnson, McMillan and Woodruff (2002); again, using a survey of firms in ex-communist countries of Eastern Europe, these authors find firms who perceive their property rights to be the weakest, invest nearly 40 per cent of their profits – less than firms who perceive their property rights to be the most secure. Since re-investment of profits is the most common manner in which small firms finance their investment, this would imply that insecure property rights would lead to lower investment and hence, growth; insecure property rights are captured by asking firms whether they are aware that others firms in their industry make extralegal payments for government services and for licenses, and unofficial payments for tax inspection, fire/sanitary inspection and for ongoing registration.

There have been few studies that address the implications of NIE for firms in Africa; perhaps the most important paper in the NIE tradition is Bigsten et al.(2000) which investigates the presence of informal institutions for a cross-section of 1169 firms in Burundi, Cameroon, Côte d'Ivoire, Kenya, Zambia and

Zimbabwe. The study finds that African firms operate in an environment characterized by contractual non-performance risk and that relational contracting is the norm for these firms, and so studies in the NIE tradition are worthy of note. A surprising finding of this study is that among the six countries incidence of contractual breach is the highest in Zimbabwe, the country with the most developed manufacturing sector as well as a good legal and court system; Bigsten et al. argue that this is because Zimbabwean firms can afford to take more chances with their transactions, knowing that they can seek the protection of the legal system if a problem arises. A second study worth noting, that is not strictly in the NIE tradition but is related to question 2a of the quantitative analysis, is Svensson's (2003) examination of the determinants of corruption for a cross-section of firms in Uganda that finds that more profitable firms tend to be subject to more bribe-taking than less profitable firms, which obviously has adverse implications for the growth of the more successful firms. Surprisingly, there are no studies, that we are aware of, that have attempted to test the predictions of Williamson's NIE using firm-level data for South Asia.

In the OPPG studies, there is relatively little use of firm-level data – the exception is the Bolivia study. Kaufman et al. (2002) provide a detailed account of the role of institutions in Bolivian economic growth in their study which combines an econometric analysis of the country's enterprise sector performance (on the basis of a detailed 80-country firm-level survey) with that of Bolivia's public agencies (based on a survey of public officials in Bolivia working in over 100 institutions). The analysis shows that low public service delivery, bribery and the lack of the rule of law are major constraints to firms' growth and the study tries to solve the endogeneity problem typical of this type of analysis, by using 2SLS and 3SLS techniques (with all other exogenous variable as instruments); a few issues limit the effectiveness of such analysis in uncovering the role of institutions on growth: firstly, no analysis is performed on the deep institutional determinants of bribery, public service delivery and the rule of law; secondly, the econometric specification seems to suffer from a weak exogeneity of the instruments for the governance indicators; finally, as in all firm-based surveys, the information collected is based upon opinions, which in the case of abstract issues such as governance, may be critically affected by subjectivity.

Institutions

Firm level performance link can be used fruitfully in a number of ways, and is made easier now because of the availability of firm level data over time, particularly to examine the link between institutions and pro-poor growth. For instance, the link between institutions and firms performance could be examine in mode detail by examining whether different types of firms conducive to pro-poor growth respond to institutions in certain conditions. This may include, for selected countries/regions, examining

- how the performance (productivity, wages, employment, entry and exit, etc.) of different types of firms (small or big) respond differently to the same type of institutions;
- how the performance (productivity, wages, employment, entry and exit, etc.) of firms respond differently to the same type of institutions interacted with different informal institutions or conditions; and
- whether firms in certain sectors respond differently to institutions (i.e. are certain institutions more suited for certain sectors – e.g. labour intensive sectors - and if so, are these the institutions that are conducive to pro-poor growth).

One way to assess the effect of institutions at the micro level is to examine the effects of different types of institutions on incomes of workers. Te Velde and Morrissey (2003) examine the sources of income for different types of workers, by extending the Mincerian wage framework, the starting point is to estimate and extend the following equation:

$$\log(Y_{it}) = \alpha + \sum_j r_j S_{ij} + \beta_1 age_{it} + \beta_2 age_{it}^2 + \gamma_1 ten_{it} + \gamma_2 ten_{it}^2 + \varepsilon_{it}$$

Y_{it} is a measure of the wage of individual $i=1, \dots, N$ at time $t=1, \dots, T$. S_{ij} is a 0/1 dummy which is 1 for the highest level j of education completed (or number of years of schooling in the original Mincerian framework) – we include all levels of education except the first (no education), hence $j=1, \dots, J-1$, and r_j is the rate of return to the completion of education level j . Experience is captured by employee's age and ten , the number of years employed by the current firm (tenure), and the squared terms all for non-linear effects.

An extension can include a variable $INST_i$ measuring institutions affecting individual i is employed is affected by certain institutions:

$$\log(Y_{it}) = \alpha + \sum_j r_j S_{ij} + \beta_1 age_{it} + \beta_2 age_{it}^2 + \gamma_1 ten_{it} + \gamma_2 ten_{it}^2 + \phi INST_i + \varepsilon_{it}$$

The coefficient ϕ is the percentage increase in wages enjoyed by individual i because with control variables (Z_k , the firm characteristics such as size, sector, etc.). Several extensions are possible, including interactions between $INST$ and sectors or skill class/education:

$$\log(Y_{it}) = \alpha + \sum_{j=1, \dots, J} r_j S_{ij} + \beta_1 age_{it} + \beta_2 age_{it}^2 + \gamma_1 ten_{it} + \gamma_2 ten_{it}^2 + \sum_{j=1, \dots, J} \varphi_j INST_{ij} + \sum_k \zeta_k Z_{ik} + \varepsilon_{it}$$

For instance, it would be possible to assess union premia (or the effect of other institutions) by type of skill level.

SUMMING UP AND THE WAY FORWARD

Summing Up

The **OPPG tools** that have been reviewed in this paper are extremely useful in generating *stylized* facts about pro-poor growth, the use of these tools can help understand whether pro-poor growth has occurred in a particular country, and in which sector; they can also help in honing down to the second stage analysis where one can then undertake further quantitative work or use qualitative methods or historical analysis of the manner institutions determine and interact with pro-poor growth processes. There is little doubt that an important strength of the OPPG studies is the comparability of the results generated from the use of a common set of tools, however, it should be noted that the OPPG tools (with the notable exceptions of intra-country regression analysis and CGE models) do not provide an analysis of the determinants of pro-poor growth. Thus, from the viewpoint of the IPPG programme, while the OPPG tools should be implemented in countries where the data exists (chiefly, household expenditure surveys in at least two different points of time), clearly OPPG tools will not suffice in themselves in examining the link between institutions and pro-poor growth.

Cross-country cross-sectional econometric methods have been the primary quantitative method used in the institutions and growth empirical literature so far. In our view, such methods have limited value in the quantitative analysis of the IPPG programme. The problem of reverse causality – that is, finding a robust instrument for institutions – is a difficult one to crack; we also do not think that such methods can help us address the three defining questions of the IPPG programme, which we operationalize for the quantitative analysis as:

1a) What determines when markets work better than hierarchies (and vice versa) in enhancing the quantity and quality of transactions?

1b) How do formal and informal institutions interact in the process of PPG? Are they substitutes or complements in their effects on PPG?

2a) How do institutions (or institutional quality, in particular) matter in bringing about PPG?

2b) How do changes in institutions affect PPG?

Macro-analysis of institutions and PPG

There are various possible quantitative approaches to modelling the effects of exogenous factors such as institutions on pro-poor growth. We suggested that building CGE models is very time consuming, and such models do not tend to include institutions in a meaningful way; there are better opportunities in using partial equilibrium modelling, but these need to avoid in as far possible the disadvantages associated with cross-country models. In particular, further research could assess the heterogeneity across countries in the relationships between institutions and growth, and further including measures of pro-poor growth (income or consumption shares of the poor, or wages and productivity of less skilled workers).

Micro-analysis of institutions and PPG

For producer-households, quantitative analysis of the impacts of land tenure changes on farmers and micro and small enterprises seem the most promising, along with an analysis of the determinants and effects of selected political and economic institutions – for example, the determinants of co-operation in water usage among rural communities, the effects of decentralization, and the effects of different types of marketing institutions. Further firm-level studies at the micro level could be as follows:

- How well do social and business networks compensate for absence of courts and formal dispute settlement procedures?

- Can courts work well without social norms and trust between firms?

- How does the insecurity of property rights affect firm investment and growth?

- How does the performance (productivity, wages, employment, entry and exit, etc.) of different types of firms (small or big) respond differently to the same type of institutions?

- How does the performance (productivity, wages, employment, entry and exit, etc.) of firms respond differently to the same type of institutions interacted with different informal institutions or conditions?

- Do firms in certain sectors respond differently to institutions (i.e. are certain institutions more

suited for certain sectors – e.g. labour intensive sectors –, and if so, are these the institutions that are conducive to pro-poor growth)?

The Way Forward

The IPPG programme can make an important contribution to the empirical literature on institutions; quantitative analysis of the questions that we have posed in Section four have been few and far between, and for macro-analysis using subnational data, most studies have focused on India, with few studies for other African and Latin American countries. For the micro-analysis of producer-households and firms, there seems to be a gap in the literature both with respect to the weakness of the econometric methods used so far (in the context of the land tenure studies) and in addressing the core questions of NIE regarding the functioning of markets and hierarchies, formal and informal institutions, and the possible outcomes that these may have with respect to PPG for developing countries (in contrast to the sophistication of empirical work undertaken for the transition economies). Given the limited resources at our command, the most sensible way forward is to think of **one or two studies** on the themes that we have discussed in sections four and five, choosing the countries or regions within countries that are the most appropriate for the themes, but this must be balanced by the recognition that primary data collection will not be possible for all cases, and that we will need to rely on secondary data wherever possible.

We propose the following set of studies for the IPPG programme:

1. Macro-analysis: a) We examine the *differences in institutional quality* at the *national level* for a panel of African countries, and the extent to which these differences has led to differences in PPG outcomes – for example, we can examine the effects of INST on the wages of unskilled workers (in absolute terms and relative to the wages of skilled workers), interacting different types of INST relevant to the employment and wage decisions of firms (i.e. economic institutions such as property rights or labour regulations and political institutions such as state-business relationships).¹¹ These are relatively simple studies from a data collection point of view relying mainly on secondary data (though measurement of political institutions requires further primary work).

b) We take one or two countries in Africa where there are clear differences in the political and economic functioning of *subnational units* (village/district/region) and examine what have been the determinants of the differences in the functioning of these units and the outcomes with respect to growth and poverty (for the latter, we will need household consumption/income survey data for at least two points in time). We could look at, for example, *the functioning of water or forest user groups* or *the provision of local public goods* across communities, linking these to political, economic and social determinants. The data requirements here are somewhat more advanced, as some of the data that we may want may not be available for many African countries (e.g. poverty data over time and within countries); it may also be necessary to collect primary data, as most existing data-sets may not have specifically addressed questions of institutions.

2. Micro-analysis of producer-households: We should undertake empirical analysis of the *determinants and effects of land tenure changes/differences* and *the effects of land titling on micro-enterprises* (wherever this has been done), using households as units of analysis. The availability of good quality secondary data will be a constraint here, however, the use of Living Standard Measurement Surveys (LSMS) – and there are now quite a few of these for African countries - may allow us to get around this constraint to some extent. We should consider whether we would like to undertake some limited primary data collection – for example, for micro-enterprises, there may be few existing surveys that we could use since these enterprises, by their very nature, are usually omitted from LSMS and firm surveys.

We should also undertake the analysis of the *effects of differences/changes in credit and marketing* institutions on farmers' investments and incomes – again, the availability of LSMS data over time may allow us to address this issue with relative ease.

3. Micro-analysis of Firms: We suggest three sets of studies with firms as units of analysis: firstly, using frameworks of analysis similar to McMillan and Woodruff, we should examine *the determinants of transactions quality* for African and South Asian firms – trade credit, investment in specific assets, and producing to order – relating these to the functioning of formal and informal institutions; a set of studies along these lines will provide a comparative dimension to this issue which has been missing in the literature. Secondly, using frameworks of analysis similar to Johnson, McMillan and Woodruff, we could examine *the determinants of firms' investments* and ask in particular whether insecure property rights have a causal effect on the latter – again we could do this for a set of African and South Asian firms to provide a comparative perspective. Finally, we could *examine how institutions affect the performance* (productivity, wages, employment, entry and exit, etc.) of different types of firms (small or big) and whether they respond differently to the same type of institutions, relating performance to differences in the working of financial institutions, corporate governance mechanisms, and the effectiveness of entry and exit procedures; we could also investigate whether firms in certain sectors (e.g. the labour-intensive sectors) respond differently to institutions (again, we would do this for both African and South Asian firms).

11. In te Velde (2005) we argue that effective state-building relationships have helped the planning of good quality and appropriate education and training in areas such as the South African automobile sector.

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ANNEXE: LAND RIGHTS AND PRO-POOR GROWTH

An ideal system of property rights to land would be fair and equitable, promote efficient use of the land, and encourage the conservation of environmental resources on the land, but this is a tall order. If product and factor markets functioned perfectly, with complete information on events current and future, zero costs of negotiation, and with all stakeholders endowed with equal initial assets by which to bargain, then these objectives might be achieved simply by assigning exclusive freehold rights to anyone. At least, this is the position of Coase in his well-known Theorem, but given market imperfections in all three dimensions, outcomes are less than ideal; the search is then on for institutional forms that improve matters.

Land rights: observed patterns

Observation through time and across societies shows several different patterns of land rights – see Box 1. In much of North America, Western Europe, and Australasia the dominant form is freehold tenure, with land units operated by household farms who are either freeholders or rent the land in from freeholding landlords. Tenancy agreements, in some countries, are subject to legal provisions that seek to provide tenants with reasonably long security of access – provided they maintain the quality of the resources, and with protection from unreasonably high rent demands.¹²

Box A1: Types of land rights

Freehold	Holder has exclusive rights to use the land, and to dispose of it by temporary or permanent transfer. Holder may offer land as collateral or in mortgage. Rights pass by inheritance laws on heirs on death of holder.
Leasehold	Holder has exclusive rights to use the land. May be able to make temporary transfer of use rights, or even trade the lease itself. Cannot permanently alienate land rights.
Communal or collective	Rights vested in a community defined by geographical residence, or affiliation by family, extended family, clan or other social identity. Individual granted user rights (usufruct) subject to maintaining the resource, and usually also to making use of it. Failure, for example, to till arable lands may lead to the user rights reverting to the community. Provided that these conditions are met, the user may have long-term rights to use of allocated resources – effectively their life time. The rights of heirs to inherit the same rights may be respected. User rights may be differentiated by season and by resource on the land – for example, tillage of soil, grazing of stock, gathering of tree fruit, collection of water, etc. User may be able to temporarily transfer user rights, but not always, and may require community approval to do so. Usually only permitted when rights are ceded to another member of the community. User cannot alienate rights permanently, nor can they offer the rights in mortgage or collateral agreements.

Source: Personal interpretation

In parts of Asia, and notably South Asia, most of the land is held by landowners with freehold rights who typically rent out most of their land on cash rentals or by share-cropping; in much of East Asia this pattern has been altered by land reforms that have transferred land either to the tiller or to the state.

Latin America also is characterized by the bulk of the land being in the hands of freeholding landlords, but in this case typical estate sizes have been large: where a large landlord in Asia might control 50 hectares, in Latin America it would be 500, 5,000 or even 50,000 hectares, thus while there may be several landlords in an Indian village, in Latin America a single landlord may control land covering several communities. Until the latter half of the twentieth century, the large Latin American estates allocated part of their land to tenant farmers on the basis of labour services indeed, the tenants of the estate were effectively tied to it by their labour obligations, with labour services subsequently commuted to cash or share rentals. In a few cases, there have been major land reforms that have allocated land either to the tiller or to the state (for example, Mexico 1910–1940, Bolivia 1953, Cuba 1959, Nicaragua 1979), but more commonly in the final quarter of the twentieth century estate owners have been increasingly prepared to take back land into central operations in order to take advantage of commercial farming opportunities.

Africa presents a quite different pattern. The settler economies and Ethiopia apart, most of the land in Africa is held at the level of the community, with councils and leaders granting usufructory rights on arable lands to community members in accordance with their capacity to work the land. Two conditions have applied to those with usufruct: that they remain members of the community and subscribe to collective

norms; and that they work the land they have been allocated and do not rent this to others or otherwise alienate the land. Rights to land in Africa are anything but freehold: rights are usufruct, but also vary by season, and typically, by use – arable and grazing lands may be treated differently, rights to collect wood and to harvest fruits from trees may also be differentiated; during the second half of the twentieth century there have been attempts to redefine land rights in accord with national statutes, usually seeking to assign individual freehold rights – see below for more discussion.

With such important variations in institutions governing land access, two questions arise: Why is that they differ so markedly? And, what is the best, or better, system or systems of rights to achieve the three outcomes that might represent a social optimum?

Explaining land rights

One approach is historical analysis: to take land rights in any given case, trace their evolution through time and, by concentrating on those key moments when significant changes were made, infer their causes. The approach is thus, at least initially, an empirical one. Other approaches, often informed by historical studies, try to develop more general theories of property rights; an example of this would be Douglass North's (1989) argument that in any given society, the key property rights will govern those factors of production that are scarce, he contends that in times and places when population density is low, key institutions control labour – examples of this include slavery and feudal norms by which peasants are tied by obligation and labour service to the local lord: as population increases, and land become scarcer per person, then land rights take on more importance.

English and Scottish history illustrates these kinds of changes – the medieval lord of the manor was first and foremost concerned to have a labour supply to work the lord's demesne, for domestic work in the manor house and for service in local militia and regiments; in the Scottish highlands, clan chiefs had similar interests in the loyalty of their clan members. From Tudor times onwards, however, a combination of market opportunity in wool production that required less labour than food crops and a growing rural population, meant that tied labour was less important than outright access to land. England then saw the enclosures as the lords sought to formalize their rights to the land. North of the border – albeit a century or two later – the Scottish chiefs expelled their clan followers from the glens to the coasts and beyond to make way for extensive grazing.

Another approach (see Behnke, 1985) looks at the transactions costs in land and argues that more exclusive rights take over as the marginal returns to exclusive use – for example, from controlling grazing, gaining returns to investments with long-run returns – exceed the marginal costs of policing and enforcing exclusion – e.g. in fencing, patrolling, and legal arbitrage. This explains why when land is relatively abundant compared to other factors of production, communal tenure forms prevail: it simply is not worth going to the trouble of formally identifying individual holdings, fencing them and enforcing exclusion. Evidence for this can be seen in villages where differing land rights apply for different lands: individual freehold for the high-value irrigated plots close to the settlement, and communal tenure on more distant and lower value, grazing lands.

Both these approaches consider economic variables and pay little or no attention to social and political forces, change in these models is inherently continuous, despite the reality of tenure forms usually changing discontinuously, and often accompanied by pronounced ruptures of the social and political fabric.

An ideal land tenure system?

Academic and formal policy debates over the merits of land tenure tend to focus primarily on economic efficiency, followed by environmental considerations, with little said about equity. Not that the latter does not get considered – when the politics of tenure is in debate, then equity is overwhelming the first and foremost criterion.

Considerations of *economic efficiency* can be divided into two fields: one concerns investment and the future productivity of the land – an argument that also overlaps with environmental concerns; the other about the more immediate use of the land.

Efficiency: investment and conservation

The investment argument concerns sufficient security of tenure to assure the would-be investor that they will be able to enjoy the returns to their investment. The conservation argument is similar: the incentives to conserve the land only apply when the land user has the security of knowing that they will benefit from conservation – or, perhaps more importantly, that the costs of not conserving the land will fall upon themselves. There is no argument on these points: denied security, the rational land user will not invest in improvements that pay off in the longer run – irrigation, drainage, tree planting, etc. – or conserve the resource – with terraces, drainage, maintaining cover crops and trees, rotational grazing,

12. The market for land is imperfect thanks to geography. Although within any region there may be many landlords prepared to rent out their fields, for the tenant farmer, the offer a field 30km down the road is not much use. Effectively, the tenant can only consider renting land within a fairly radius of their base; and there may be so few potential landlords in this case, that the local landowner has an effective monopsony on renting out.

etc. The debate turns then on what rights confer security; for some, individual freehold rights, mapped, titled and duly registered with the state and backed by appropriate laws, mark a threshold of security; forms of collective tenure are then seen as offering too little security for investment – and thus to getting the full potential from the land.

However, the evidence suggests otherwise, studies show that farmers with usufructory rights under collective tenure invest, improve and conserve their land to the same extent as their counterparts with freehold rights – for example in Uganda, Place & Otsuka (2002) compared land use in neighbouring areas, one with customary tenure, the other with leases under the 'mailo' system or from public land. Household surveys showed no difference in land productivity; there was, however, a reluctance to fallow on customary land; since fallow fields were seen as land unused. Interestingly in this case, customary tenure actually encouraged the planting of coffee trees since the trees affirmed and strengthened land rights in the eyes of customary authorities.

In Burkina Faso, Ouedraogó et al. (1996) survey eight villages, different land rights could be separated into six categories: hereditary; use rights for up to 1 year; 2–5 years, 6–9 years, 10 years or more; and unlimited use rights (of someone else's land) – little or no land insecurity was reported. Measurements of plot yields suggested little, if any, difference between the plots in productivity and there was no evidence of any differences in the use of inputs or in investments between the categories of land. In Ghana, Bakang & Garforth (1998) examined the contention that land degradation in the Upper West Region was the result of a lack of tenure security that resulted in collective resources being exploited by individuals without regard to the consequences, the authors report that the communal tenure systems were not open access, and that the collective rights were secure, if somewhat complex in application. Similarly in Zimbabwe, Mutema (2005) found that land rights in communal areas and two different types of resettlement areas where individual leases had been issued by the state, were all equally secure in the eyes of the land users; moreover, survey data showed no differences in investments or land use that could be attributed to tenure status. These findings do not only come from Africa; Mexico provides a testing ground for ideas about collective tenure, as roughly half the country's arable land was reformed after the Revolution of 1910, with almost all of this land being granted collective tenure in village-level ejidos. Although property rights are vested in the ejido, members have individual usufruct of arable land – Heath's (1992) review of agricultural productivity argues that there are few differences between the performance of ejido and private/individual freehold farms once scale effects have been considered.

Thus there seems to be ample evidence that the security that farmers feel they have, and which therefore influences their actions, can be provided within collective tenure as much as it can within systems of individual freehold. This rather confirms the general point about institutions: it is the functioning rather than the form that matters.

Efficiency: technical and allocative

The other question of efficiency is less a matter of investment, and more a matter of technical and allocative efficiency. The existence of sharecropping has long stimulated economists; the microeconomics, at first sight, suggest that sharing the crop will result in the tenant using the land inefficiently, arguing that at the margin, only a part of the additional return to a variable input such as an extra bag of fertiliser or another day spent weeding will go to the tenant, and hence the sharecropper will apply less of such inputs, and get correspondingly less output, than would the freehold operator or the cash rental tenant who would get all of the marginal return to the marginal input (Ellis [1993] sets out the arguments). This would make little sense for the tenant or landlord; a fixed rent, or the landlord simply taking the field in hand to operate would generate more output and surplus and yet sharecropping is a persistent arrangement. Observers usually see, on closer examination, that sharecropping involves interlocked contracts where those for land are also linked to those for credit and labour. Where credit markets fail small operators, owing to the high transactions costs, the landlord advancing some or all of the purchased inputs solves the problem. Similarly, landlords face high transactions costs in supervising hired labour when operating fields on their own account: sharecropping ensures that the labour of the tenant is supervised by the tenant.

Accordingly, sharecropping offsets, in large measure, the problems from imperfect factor markets, but others are sceptical that the arrangement is purely one to improve efficiency, and see in, the disparities of bargaining power between landlords and tenants, a way to lock the tenant into exploitative deals whereby the landlord takes an unfair share. Presumably the argument here is that degree of interlinkage makes the true cost of access to the land less clear, and less likely to provoke resentment, otherwise landlords could presumably use their power to extract the same value under cash rents.

Similar considerations of factor market failures probably explain the often-observed 'inverse ratio' of yield per unit area and farm size. Survey after survey shows this – Cornia (1985) reported that 13 out of 15 countries in the 1970s showed signs of the inverse ratio. The following three tables, from settings as diverse as India, Brazil, Nigeria and Kenya, are typical:

Table A1. The inverse relation: India & Brazil

Group Size	Average Farm Size	Income Per Unit Area
<i>India (acres)</i>	<i>(acres)</i>	<i>Rupees per acre</i>
0-5	2.95	737
5-15	9.3	607
15-25	19.5	482
>25	42.6	346
<i>Brazil (ha)</i>	<i>(ha)</i>	<i>US\$ per ha</i>
0-9.9	3.7	85.92
10-49.9	25.5	30.73
50-99.9	71.9	16.19
100-199.9	138.9	8.80
200-499.9	313.2	5
>500	1,178	2.20

Source: Berry & Cline 1979

Table A2. The inverse relation: Nigeria, Lafia Agricultural Development Project, Plateau State 1982-84

Farm size (ha)	Mean farm size (ha)	Number of farms	Mean size of family workforce	Mean land area per worker (ha)	Total value of output (N)	Value of output per ha	Value of crop sales (N)	Sales as % of total	Sales per ha (N/ha)	Average return per family worker
0-1.5	1.05	91	2.15	0.49	477	454	193	40%	184	222
1.6-2.5	2.21	70	1.98	1.12	681	308	282	41%	128	344
2.6-3.5	3.11	38	2.53	1.23	888	286	385	43%	124	351
3.6-5.5	4.35	8	2.94	1.48	956	220	421	44%	97	325
>5.6	7.27	7	4.14	1.76	1,288	177	651	51%	90	311

Source: APMEPU, in Eyoh 1990, 1992 (last column derived from Eyoh's data)

Table A3. The inverse relation: Kenya: smallholder areas, 1974-75

Size class of holding (ha)	Number of holdings 000s	%	Area covered 000s (ha)	%	Average size of holding (ha)	Average farm operating surplus shs/ha/yr (a)		Average household income per member shs/yr (a) shs/yr (b)		Output (c) per ha shs/ha	Labour use (d) per ha shs/ha	Output/labour ratio
<0.5	206.4	14.8	53.7	1.5	0.26	5,625	5,929	560	594	4,335	969	4.5
0.5-0.9	265.8	19	180.7	5.1	0.68	2,650	2,852	657	686	2,213	419	5.3
1-1.9	400.4	28.7	560.6	15.9	1.4	1,142	1,331	634	687	1,104	221	5
2-2.9	224.1	16	533.4	15.2	2.38	973	1,092	699	756	904	151	6
3-3.9	131.9	9.4	445.8	12.7	3.38	663	728	683	721	713	122	5.8
4-4.9	107	7.7	467.6	13.3	4.37	776	812	946	973	800	113	7.1
5-7.9	9.7	0.7	610.2	17.4	6.33	434	504	728	790	519	70	7.4
>8	51.5	3.7	664.4	18.9	12.9	249	275	912	960	224	32	7
All Farms	1,397		3,516		2.37	873	973	683	727	841	147	5.7

Notes: Data corrected for varying household size in terms of adult equivalent by calculating average income per member

(a) As estimated in IRS

(b) Adjusted on basis on revised livestock valuation change

(c) Output equals farm operating surplus less crop and livestock valuation change

(d) Labour use includes value of family labour

Sources: Dorling 1979, Tidrick 1979, both quoted in Hunt 1985 (Tables 9.4 & 9.5)

Land, it seems, is often more productive on small- rather than on large-holdings, probably since labour inputs per unit area are so much higher on small-holdings. In the Kenyan case the average returns-to-labour rise with farm size, from just over 4 to 7 or more; in the Nigerian case, the smallest farms again have the lowest labour productivity. This is puzzling, since it violates the principle that competitive enterprises with access to similar technology would use inputs so that their marginal values – compared to their prices – were the same for all factors of production;¹³ thus it would be expected that similar farms with similar knowledge of technology, and facing the same prices in markets, would apply factors of production in similar intensity.

This may partly be explained by the fact that – some large holdings contain tracts of low productivity land – yet even when holdings with similar land quality are compared, it still seems that smallholders farm their land more intensively than large farmers. More important, it seems, are failures in labour, land and capital markets; smallholders face different relative prices for labour, land and capital compared to large farmers:

- Supervision and the other transactions costs of acquiring labour are minimal for the family-operated holding, but considerable for the large farmer hiring in staff. Incentives to apply labour carefully and promptly are greater when the manager (and family) is part of the workforce – hence the real cost of labour is less for small farms than for large farms.

- Land markets do not work well: in the rental market, land may be held back from the tenancy for fear of loss of land to political action, thus driving up the cost of rented land above that justified from the returns to farming it; in the purchasing market, land prices offered by richer and larger farmers may be inflated since the price includes the value of land as collateral, as prestige, or as a form of savings. At the other end of the scale the price of smallholdings may be depressed because of the distress nature of many sales, when sellers have to make the sale immediately to cover emergency expenditures – hence land may be expensive to acquire for small farmers and be cheaper for the larger farmers.

- In credit markets smallholders face daunting transaction costs when dealing with formal banks and thus cannot obtain socially-optimal amounts of credit; they incur costs in providing documentation (character references, business plans, copies of land documents and identity papers, etc.) and making trips to the banks. Since these costs tend to be fixed for any loan, they are proportionately higher for

13. This is the 'equi-marginal principle' (of least-cost production) that states that, if there are two inputs into production, then the inputs will be applied to the point at which the ratio between the marginal physical products of the inputs is equal to the ratio of their prices.

small ones – hence larger farmers looking for credit in large loans usually obtain formal credit at a lower cost than smallholders.

If small and large farmers face different real costs for factors of production, small farmers can be expected to use more labour, less land and less capital than large farmers who would economize on labour and substitute land and capital for labour. This discussion suggests that although some institutional arrangements such as sharecropping may help compensate for factor market imperfections, these still remain large and lead to inefficiencies. One other way of responding to this, would be to intervene in land markets by compulsory redistribution¹⁴ – again, an institutional response to factor market failures.

Land tenure policy: titling

The gamut of possible tenure policies is wide, running from interventions to control tenancy arrangements, to allocation and confirmation of land rights, and redistribution of land – under which headings there are all manner of variations. In this section, just one set of policies is singled out for examination: selected since in Africa, they have been consistently advocated for half a century or more; the case in question is that of land titling programmes.

Arguments to the effect that collective tenure systems necessarily imply tenure insecurity and thus reduced investment – as well as provoking a ‘tragedy of the commons’¹⁵ – by which the costs of excessive use of communal resources fall as an externality on others beyond the immediate user – have long been deployed in Africa as though they were self-evident truths. For almost as long, social scientists, with anthropologists to the fore, have questioned the evidence; by and large they report that collective tenure offers those with usufruct considerable security, they also argue that even those resources, grazing being the prime example, that are used communally are subject to collective rules of use that can prevent the depredations that some see as inevitable. These contrary views notwithstanding, policy makers have been much attracted by the apparent imperative of formally registering land rights in Africa – a predilection in which they have been indulged by some donors who have been prepared to fund and provide technical assistance for such programmes. One of the most longstanding programmes is that of Kenya where titling began in 1954; by the early 1990s the programme was still far from complete.

What has been Kenya’s experience of titling? The exercise has been slow and costly: mapping and registration is technically demanding and more importantly, the adjudication has been individual with the title usually going to a senior adult male. In some cases the status of plots has been disputed, with arguments over who should get the title, between those who consider themselves guardians of the land of extended families and clans, and those holding usufruct rights. Secondary and temporary rights cannot be registered and thus potentially the rights of the less powerful are lost – with women, youth, temporary residents and migrants, the losers. Perhaps the most remarkable feature of the Kenyan experience has been the partial irrelevance of titling. There is little evidence of significant differences between the use of land that is titled to that which is or was not, once differences in location and ecology have been taken into account (see Tiffen et al [1994] on the case of Machakos). The land registers created with such painstaking work have rapidly become outdated – when male titleholders have died, the heirs have often not bothered to inform the registry and in addition, many transfers are simply not recorded (Shipton & Goheen [1992] note the same point for Africa in general).

To make matters worse, some argue that once the formal system exists alongside the traditional rules, although the latter may continue to be used, there is no end of scope for conflicts and confusions; the prudent land user may then feel that they have to pay homage to two competing institutional matrices – one customary and local where land access has much to do with identity and social standing; the other formal and legal where access is determined by universal rules of registration and legal conveyancing. It is argued that this can lead to heavy investments in satisfying the requirements of both systems, to the point that resources that might otherwise be invested in production are frittered away (Berry, 1993). Those critical of the limitations of titling have proposed that the institutions should be those that define processes to arbitrate between competing claims, according to circumstances that may be in constant flux and that are specific to localities (see for example, van den Brink [2002]), but against this stand two major considerations, one usually made explicit, the other more covert. The first stresses the value of freehold (and some leasehold) titles as collateral in financial markets:¹⁶ in effect, another land institution that corrects for factor market failings. Kenya again provides evidence of this; Haugerud (1989) observed that in the Embu District the value of (titled and registered) land was largely in its mortgage value, thus allowing the enterprising to raise capital that, at the time of her studies in the early 1980s, was usually not invested on the land, but in non-farm businesses. The second argument is that land markets must be coaxed into existence so that seemingly inevitable processes of land transfer (and concentration) can take place, allowing the energetic, enterprising, efficient (and large-scale?) access to more land at the

14. Whether owners are compensated or not, and whether beneficiaries pay for the land they receive is a matter of distribution, rather than one of efficiency.

15. To use Hardin’s (1967) rotten choice of words. What Hardin should have said was the ‘tragedy of open access resources’ since this was what his impeccable micro-economics modelled.

16. For some this is one more reason to oppose titling: once property can be mortgaged, it can be lost. The feckless and the weak may thus lose the one asset that stands between them and destitution.

expense of those less capable or willing to use it more productively. In some cases – Mexico in the 1990s would be a good example – it has been argued that this would create conditions under which agreements can be made with urban and foreign capital for investments. Arguments along these lines alarm those who see land as something more than a factor of production; rather as a source of identity, and a family and community heritage, a fall-back for the unemployed and the elderly. To summarize, these debates show institutional change as embedded in two realms of considerations – one of economic efficiency, in which the calculation is that overcoming the imperfections of markets for greater production and income; and one of power, distribution, politics and culture, where access to land is deeply woven into the social fabric.

Policy: notwithstanding the objections, much policy has been concerned with individual titling; with different views of its effectiveness:

- epiphenomenal, possibly disruptive of endogenous changes, possibly inequitable – in giving titles to primary land claimants, what happens to the rights of others? costly and a waste of money; or
- an important public investment in institutional change that has to come at some point in the evolution of property rights?

Perhaps the important point is to be sceptical of the wilder claims – for example, in Mexico, in 1993, the government claimed that allowing individual titling of ejidos would lead to more investment on ejidal farms – to date there is little evidence of this beyond a few show piece ejidos. On the other hand, in Cameroon a programme to encourage individual titling was welcomed by some farmers in so far as it involved the state installing concrete boundary markers around their plots, but once the markers were laid, most farmers did not bother to get the formal land certificate. (Firmin-Sellers & Sellers, 1999).

Table A4. A Summary of Empirical Work on Land Tenure

Land tenure: effect on investments	Expect: Tenure affects security of property Assurance of returns to investment stimulates investment
How does tenure affect security of property rights?	Note land market failures Less land is transferred either temporarily or permanently, because: <ul style="list-style-type: none"> • Fear of expropriation of land rented out • Value of land in collateral when credit markets are imperfect • Social prestige of owning land (loss of identity if no land is held) High fixed costs on formal land sales (and on rental agreements) raise transactions costs when small plots are transferred
How does security of tenure affect investments?	<ul style="list-style-type: none"> • Expectation of being able to appropriate returns • Ability to correct market failures Formal titling creates an asset that can be mortgaged or offered as collateral. Key role here in correcting failures in credit market
How does tenure affect investments?	

Sources

Place Uganda, Mutema Zimbabwe

<p>Place, Frank & Keijiro Otsuka, (2002), 'Land tenure systems and their impacts on agricultural investments and productivity in Uganda'. <i>Journal of Development Studies</i>, 38 (6), pp. 105–128.</p>	<p>Compared use of land in two areas: one with customary tenure, the other with leases under the 'mailo' system or from public land. Surveys of households in both areas – with sample sizes of 40–50 households; regression analysis. Found no difference in land productivity; but there was a reluctance to fallow on customary land. Planting coffee was a way to affirm land rights.</p>
<p>van den Brink, Rogier, (2002), 'Land policy and land reform in Sub-Saharan Africa: consensus, confusion and controversy'. Presentation to the Symposium on Land Redistribution in Southern Africa, Pretoria, November 2002.</p>	<p>We do not 'own the land': what we have in Africa, as elsewhere is a bundle of rights to use and dispose of land in particular ways. These rights are defined by who? What activities? Where & when? And how was right acquired? Rights are social: when they are accepted by all, then rights become secure. Argues that the old idea that security would best be provided under individual and formal titles that gave the widest range of rights for an infinite time over a given territory, has crumbled in the face of arguments for regimes that give people access to the rights they need at particular times. This is especially apt for pastoralists who make use of fodder resources that arise in particular places and times, and subject to uncertainty.</p>
<p>Larson, Janelle M., Stephen M. Smith, David G. Abler & Carolina Trivelli, (2000), 'Land titling in Peru: is it fulfilling its promise?' <i>Staff paper 332</i>, Department of Agricultural Economics & Rural Sociology, Pennsylvania State University, USA.</p>	<p>Paper reports on a study of over 300 small farms in the Huaral Valley of coastal Peru. Despite the commercialisation of farming in the area, credit was obtained by less than half of farms. Some farms had idle land for want of such finance. Land titling did help farmers gain access to credit, and to sell land, but the land market was almost stagnant. Titling and access to credit was biased towards the larger of the smallholdings. Overall, it seems that titling can help create land markets and facilitate access to credit, but the overall degree of failure in credit and land markets remains high.</p>
<p>Fearnside, Philip M., (2001), 'Land-tenure issues as factors in environmental destruction in Brazilian Amazonia: the case of southern Pará'. <i>World Development</i>, 29 (8), pp. 1361–1372.</p>	<p>Sees the environmental and social problems of southern Pará as arising from land tenure failings – unequal holdings, illegal seizure of land, poor land registries, and an INCRA that is led by the MST and other NGOs. Settlers have difficulty in making use of any land they get, and may themselves renege on debt or sell the land to others. Meanwhile pressure on land mounts as new migrants enter the area, mainly from Maranhão.</p>
<p>Gray, Leslie C. & Michael Kevane, (2001), 'Evolving tenure rights and agricultural intensification in southwestern Burkina Faso'. <i>World Development</i>, 29 (4), pp. 573–587.</p>	<p>Article shows that there is no evidence that population build up, or migrant status, or collective land tenure leads to resource degradation in SW Burkina Faso; but land rights here are endogenous: they become stronger through continuous cultivation and this favours the rights of the richer farmers who can maintain their fields in cultivation through investments in fertiliser and manure. Hence the process may be inequitable. It may also give rise to increasing social conflict over land rights.</p>
<p>Bakang, J. A. & C. J. Garforth, (1998), 'Property rights and renewable natural resources degradation in north-western Ghana'. <i>Journal of International Development</i>, 10, pp. 501–514.</p>	<p>Most observers see land degradation occurring in the Upper West Region of Ghana. Loss of vegetation is important, as a result of land clearance for farming, gathering, grazing, bush burning and settlement and building. Nsiah-Gyabaah attributes this to the lack of security of tenure, with locals exploiting collective resources without regard to the consequences. This paper questions the characterization of 'communal' resources in UWR as open access. It looks at how the Dagaaba, the main group in UWR, see their property rights. Collective rights are secure, if somewhat complex in application.</p>

<p>Preibisch, Kerry Lynne, (1997), 'Artículo 27 y los 27 ejidatarios de Emiliano Zapata: género, generación, y la mercancía de tierra en una zona hortícola'. Paper to the Latin American Studies Association Conference (Guadalajara, México, April 1997).</p>	<p>Argues that despite the status of ejido land as collective, an active land market could be seen in the community (near Atlixto, Puebla).</p>
<p>Ouedraogó, Robert S, Jean-Pierre Sawadogo, Volker Stamm & Taladia Thiombiano, (1996), 'Tenure, agricultural practices and land productivity in Burkina Faso: some recent empirical results'. <i>Food Policy</i>, 13 (3), pp. 229–32.</p>	<p>Re-examines the debate about whether unformalised land rights limit investment in land. Based on field survey data for 1993–94, using 8 villages, pairs of prosperous and disadvantaged, in four provinces of BF; total of 290 households cultivating 1,175 fields covering 1,290 ha. In these cases there was little or no land insecurity. There was no evidence of any differences in the use of inputs or in investments between the categories of land – interestingly there was little erosion control, water conservation, use of fertiliser or manure or of animal draught (the exceptions came largely from Kossi in the west where cotton is sown). Measurements of plot yields suggested little if any difference between the plots in productivity.</p>
<p>Okoth-Ogendo, H W O, (1993), 'Agrarian reform in Sub-Saharan Africa: an assessment of state responses to the African agrarian crisis and their implications for agricultural development' in T J Bassett & D E Crummey, (eds), (1993), <i>Land in African agrarian systems</i>. (University of Wisconsin Press, Madison, Wis.).</p>	<p>Argues that the problems of Africa's lands do not arise from land tenure. Governments, like their colonial antecedents, have tended to blame the victims and try to change tenure towards freehold with individual titles.</p>
<p>Hunt, Diana, (2005), 'Some outstanding issues in the debate on external promotion of land privatisation'. <i>Development Policy Review</i>, 23:2, pp. 199.</p>	<p>Since the early 1990s, the dominant consensus in the debate on land rights reform in sub-Saharan Africa has been that external interventions to privatise land rights are usually inappropriate and likely to remain so. This article suggests that two elements in the debate – the scope for varying adjudication criteria, procedures and support systems in order to enhance equity, and the influence of a region's agro-ecological and socioeconomic characteristics on the impacts of tenure change – merit further attention. The article urges a shift towards a more pragmatic approach, sensitive to the diversity of both physical and socio-economic conditions within which tenure systems operate. Illustrative evidence is drawn from a relatively low-potential farming region in eastern Kenya.</p>
<p>Bernstein (2005)</p>	<p>Sets the debates over land within the context of the commercialisation of economy, and what are disguised class struggles.</p>
<p>Haugerud, Angelique, (1989), 'Land tenure and agrarian change in Kenya', <i>Africa</i>, 59 (1), pp. 61–90.</p>	<p>Little evidence that official titling affects agricultural productivity. Titling has actually reduced security of tenure. Energies diverted into securing access to resources, rather than into production – much competition for resources</p>
<p>Berry (1993)</p>	<p>'In most contemporary African societies, the allocation of state resources and the enforcement of state directives are, to say the least, negotiable, and ordinary Africans invest as much (if not more) time and money in the means of access and manoeuvring as in the means of production.' (64) Stresses the investment in social relations in unpredictable circumstances, and how this has first call on energies of people.</p>

<p>Shipton, Parker & Mitzi Goheen, (1992), 'Introduction: understanding African land-holding: power, wealth, and meaning'. <i>Africa</i>, 62(3) pp. 307-325.</p>	<p>Land a matter of social relations Access to land varies by time and place Rapid obsolescence of land registers</p>
<p>Berry (1993) WD</p>	<p>'...interests and institutions... are dynamic, contested and ambiguous. Rational choice analysis does not lend itself very well to analyzing situations in which people seek not so much to clarify options, prioritize interests, and specialize in a few productive and organizational activities, but rather to keep options open and ambiguous, proliferate connections, and diversify both their social and economic portfolios.' (1060)</p>

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