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INFRASTRUCTURE REGULATION AND POVERTY REDUCTION IN DEVELOPING COUNTRIES: A REVIEW OF THE EVIDENCE AND A RESEARCH AGENDA

David Parker*, Colin Kirkpatrick and Catarina Figueira-Theodorakopoulou*

University of Manchester

***and Cranfield Centre for Competition and Regulation Research School of Management**

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Institute for Development Policy and Management, University of Manchester,
Harold Hankins Building, Precinct Centre, Oxford Road, Manchester M13 9QH, UK
Tel: +44-161 275 2798 Fax: +44-161 275 0808
Email: crc@manchester.ac.uk Web: www.competition-regulation.org.uk

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INTRODUCTION

International development policy since the 1980s has emphasised privatisation, market liberalisation and regulatory reform. Although much has now been written on the effects of privatisation and market liberalisation (for a recent review of the literature see Parker and Kirkpatrick, 2005), relatively less is known about the impact of state regulation especially in terms of poverty reduction. The UN Millenium Goals require that global poverty be reduced by 50% by 2015 and that health and education and the environment be improved (UN, 2000). But the challenge is huge. The number of chronically poor may range from 450 million to 900 million. In Sub-Saharan Africa, the World's poorest region, more than a half of the population lives on less than US$1 a day and globally one billion lack access to safe, piped water supplies and 2.2 billion to proper sanitation. Around two billion people are estimated to lack access to electricity supplies and inadequate communications limit economic development. A recent report on the demand for infrastructure services in developing countries between 2005 and 2010 suggested that annual investment and maintenance costs could total, at a minimum, US$465bn per annum, if services are to grow sufficiently to meet the demand (Fay and Yepes, 2003). Another report, concentrating on water services, has put the annual investment needs in developing countries as rising from US$75bn in 2001 to US$180bn, if the UN's Millenium Development Goals are to be met (Camdessus, 2003).

Improved infrastructure services are recognised to be a crucial part of economic development (Kessides, 2004). Where power supplies, water and sanitation, telecommunications, ports and airports and road and rail links are poor and unreliable the scope for economic development is severely curtailed. The promotion of economic growth needs more investment in and improved management of infrastructure, hence the arguments for privatisation. However, a prerequisite of successful privatisation of monopoly activities is effective and efficient regulation. At the same time, there is growing recognition that if the economic reforms are to have their intended effects of raising economic growth and reducing poverty, there needs to be a commensurate improvement in regulatory governance. Inefficiencies in state regulation have been identified as a primary cause of poor economic performance (World Bank, 2004).

Regulation can take many forms and definitions of regulation differ (Minogue, 2005). At one extreme, the term regulation is applied simply to rules of behaviour laid down by dedicated regulatory bodies of the state, such as Public Utility Commissions and Government Departments. At the other, it can embrace all forms of influencing human behaviour, extending from state regulation to private sector behavioural norms and "self regulation". To keep the discussion manageable, in this paper we opt for the narrow definition. More specifically, we are concerned with the rules and directives of government departments and government agencies in so far as they impact on infrastructure provision. Various governmental agencies (or quangos) have been created in recent years; for example, about 20 regulatory agencies have been set up in the Philippines (Cariño, 2005, p.8). These are sometimes the result of infrastructure privatisation programmes promoted by donor agencies. In particular, dedicated regulatory offices commonly exist for a number of infrastructure industries, notably telecommunications and power, modelled on those in the US or Europe.

This paper focuses on economic regulation and particularly the regulation of prices, outputs and service quality. In the first section of the paper we consider how regulation could be used to advance the reduction of poverty. We then turn to the existing evidence in the development literature on regulation and poverty reduction. We find that the existing knowledge is patchy, at best. While much has now been written about regulation in developing countries, especially in relation to the privatisation of infrastructure, little of this has focused specifically on the poverty agenda. We conclude by providing an agenda for future research into regulation and poverty reduction in developing countries with the aim of improving our knowledge of the extent to which regulators address poverty issues and about the results of their regulatory decisions on poverty levels. The premise that lies at the heart of the paper is that well-regulated markets can promote national economic development and protect the interests of the poor. The study is intended to highlight areas where future research should be directed so as to raise the profile of regulation in poverty reduction, albeit with a particular emphasis on infrastructure services.

HOW REGULATION CAN HELP THE POOR

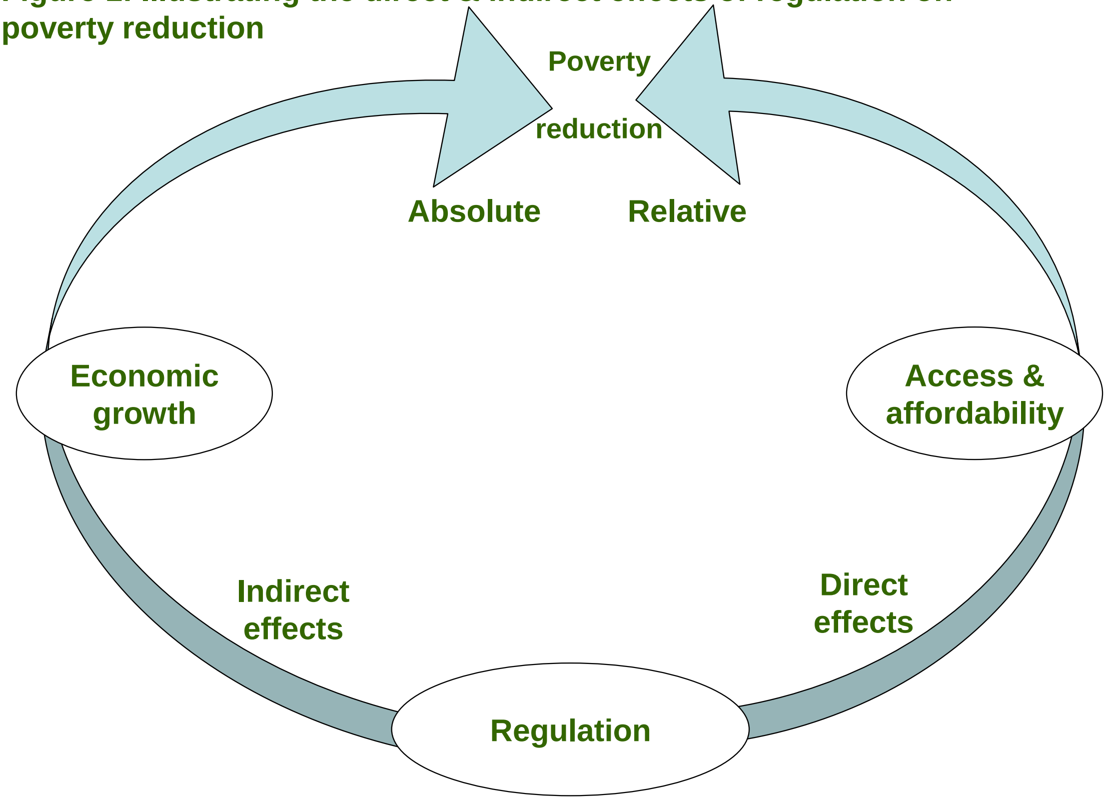
The causes of poverty are complex and are subject to vigorous and sometimes acrimonious debate about the origins and types of poverty (Sen, 1981, chapter 2; Hulme and Cooke, 2002). A distinction is often made between absolute and relative poverty, the former being concerned with average real GDP per capita and the latter with the distribution of income and wealth in a country (the variance in real GDP per capita). That the relationship between economic growth and poverty reduction is complex and not highly predictable is now recognised (UNDP, 2002, p.23; Mbabazi et al., 2003). Economic growth may be important in terms of reducing absolute poverty but may not, in itself, address relative poverty. For example, Kuznets (1955) suggested that there was an inverted U-shaped relationship between per capita income and income inequality. At relatively low levels of per capita income there was a positive relationship between economic growth and inequality, but once a higher level of income was achieved then inequality began to decline. However, empirical studies have been inconsistent in finding such a U-shaped relationship (see Cook and Uchida, 2005, p.2 for a review). Some literature suggests that growth creates inequalities, but these can be offset by the effect of higher national income on reducing absolute poverty (see the survey of the literature on growth and inequality by Berg and Krueger, 2003; also Srinivasan and Wallack, 2004; Dollar and Kraay, 2002, 2004).

A study involving 121 countries for the years 1960 to 2000 has suggested that economic growth is positively related to the stock of infrastructure assets and that income inequality falls with higher infrastructure quantity and quality. Hence, developing infrastructure seems to be a highly effective means of combating poverty. As the authors of the study state: "the conclusion that infrastructure both raises growth and lowers income inequality implies that infrastructure development may be a key win-win ingredient for poverty reduction" (Calderón and Servén, 2004, p.26). For regulation to address poverty reduction, it needs to tackle both absolute poverty – by stimulating economic growth – and relative poverty by addressing affordability and access to public services. As affordability and access are usually directly under the control of regulators, we can refer to a direct effect on relative poverty. However, only indirectly does regulation impact on economic growth.

This approach to the relationship between regulation and poverty reduction is illustrated in Figure 1. The quality of regulation can have an effect on poverty reduction indirectly by promoting sound governance regimes and therefore stimulating investment and entrepreneurship, leading to faster economic growth. In particular, a regulatory regime may be conducive (or not) to both inward foreign investment and domestic investment. Equally, regulation may have more direct effects on poverty by addressing affordability and access by the poor to services. Regulators can design regulatory mechanisms and methods that improve provision for the poor and can attempt to achieve certain social objectives, such as providing services in remote areas and reducing risks to public health and safety. Regulators should also be aware of changes in industrial structure brought about by deregulation and increased competition and the effects on incomes and employment amongst the poor. Finally, regulators in developing countries, as elsewhere, need to remain acutely aware of the threat from special interest groups leading to "regulatory capture", which can lead to regulation having a regressive effect on income distribution.[1] In the discussion below the concern is with the direct and indirect effects of regulation on infrastructure services and poverty reduction.

[1] The regulatory capture literature warns that a maximising social welfare goal cannot be presumed and that regulation may result in the promotion of special interests rather than the public interest (Stigler, 1971; Posner, 1974).

Figure 1: Illustrating the direct & indirect effects of regulation on poverty reduction



Regulatory reform in developing countries needs to address the design of pricing and access policies which balance economic efficiency and social equity (World Bank, 1994). In order to do this successfully, there is an urgent need to improve both technical and economic expertise and to design appropriate regulatory models and tools to achieve these two sets of goals, perhaps based on simplified means of intervention which are more appropriate to developing economies than exist in developed countries (Wegelin and Borgman, 1995; DFID, 2000, Kirkpatrick, et al., 2005). Moreover, mechanisms need to be in place to identify the critical circumstances where regulatory intervention is needed so as to avoid over-regulating (World Bank, 1999).

The poor are not, of course, a homogeneous grouping and may have different needs, entitlement relations and resource endowments (Sen, 1981), which complicates regulatory policy. In particular, the poor are both consumers and owners of assets (sometimes physical assets such as land but otherwise human resources or provision of labour). Each of these roles of the poor in an economy needs to be understood by regulators if effective action is to be taken to address their poverty. A regulator in a developing country will need to understand the needs of the poor, their location and the real barriers to their access to adequate services. The regulator will also need to understand the different ways in which the interests of the poorest might be best advanced; for example, the promotion of local electricity supplies using small generators or solar power compared with expanding the national grid, or the provision of communal water and sanitation schemes. Information is therefore a key pre-requisite of pro-poor regulation. To this end, in Ghana, for example, regulators normally consult with industry, government and consumers and have public hearings (Aryeetey and Ahene, 2005, p.14). In Jamaica the regulator attempts to discover views through local churches and in Bolivia town hall meetings are held (Smith, 2000, p.13). In Colombia regulators hold public hearings involving operators and consumers and invite consumer organisations to make representations; the credibility of these organisations has been boosted by their partnerships with some of Colombia's universities (Cannock, 2002) However, in the case of many other countries it is not clear whether and how regulators attempt to gauge the views of the poor and there must be concern that regulators receive most of their information from the regulated firms, politicians and higher income groups or elites. For instance, in the Philippines the regulatory agencies stand accused of a lack of transparency in decision making: "Many complaints against regulators cite their closed-door decisions, their less-than-public hearings, their tilt toward the industry's representatives, even their ability to communicate simple information to their buyers and consumers" (Cariño, 2005, p.26).

In developing countries there are a number of potential regulatory challenges. These are, firstly, *to achieve adequate access by the poor to vital services*. The poor often do not have access to safe water and sanitation, telecommunications or mains power, especially in rural areas. Secondly, *the related issue of affordability of public services* is of concern. Where the marginal cost of expanding supply exceeds the marginal revenue that the poor can afford to pay, services will be deficient; but regulators do not have access to funds to pay direct subsidies and may be restricted in the extent to which they can enforce cross-subsidies between richer and poorer consumer groups, especially where markets are being opened to competition. New entrants will tend to target the higher priced, more profitable markets. This can lead to a disconnect between economic efficiency and social goals. Thirdly, regulatory offices in developing countries may be very understaffed and staff may lack proper training, leading to *inadequate regulatory capacity*. Finally, regulation can create what is known as *regulatory risk*, which can have a sharply adverse effect on private investment. This links to the adequacy of the protection of private property rights in countries, the continuing commitment to regulatory contracts by governments, and the issue of regulatory capture.

Economists tend to view government policy in terms of achieving allocative and technical efficiency, leaving questions of income and wealth distribution to others. However, in lower income countries the welfare state tends to be little developed. Hence, it cannot be safely assumed that higher prices, say, for water services, so as to relate charges more closely to marginal costs, will be compensated for by larger welfare payments to the poor. Affordability will be affected if services are priced higher while incomes remain depressed. Regulators may ignore issues of poverty and affordability if their agenda is purely concerned with economic efficiency, perhaps because regulation is based on regulatory models from the US and Europe introduced by donor agencies.

Important issues relating to regulation and poverty reduction in developing countries seem to result from the discussion so far. They are:

1. The extent to which regulators in developing countries prioritise access by the poor to vital services and what measures they adopt to improve and monitor access.
2. If and how the affordability issue is addressed.
3. What deficiencies in administrative and regulatory capacity exist and how these impact on the ability of regulatory offices to deliver a poverty reduction strategy.
4. What influences regulators when coming to regulatory decisions, including issues of information about the needs of the poor and regulatory capture by elite interests.

We now turn attempt to shed light on these issues by reviewing the existing evidence on regulation and poverty reduction. This section of the paper draws on published studies of the operation of regulatory regimes in lower-income economies.

THE EXISTING EVIDENCE ON REGULATION AND POVERTY REDUCTION

Research into the characteristics and determinants of household poverty in developing countries shows that the poor usually suffer from both a high degree of exclusion from public infrastructure services and from the poor quality of those limited services to which they do have access (Kirkpatrick and Parker, 2003). Moreover, although in one sense the urban and rural poor share a common poverty, there may be many regional and local differences, in particular, typically rural areas are much less well served by infrastructure services (Komivese et al., 2003). For example, in Sir Lanka it is claimed that the reduction in poverty since the early 1990s has been slow and regionally uneven and poverty alleviation programmes have become vehicles for political patronage at the grass routes (Kelegama, 2003).

From the 1980s the deficit in developing countries in terms of infrastructure provision has been tackled by donor bodies at least partially through promoting privatisation and market liberalisation policies. The intention is that privatisation will introduce superior private sector management skills and scarce capital and thereby improve services and raise economic growth. The expectation is that privatisation will raise economic efficiency in sleepy and sometimes corruption-ridden state enterprises. Undoubtedly there have been successes. Where success has resulted, not only has the profitability of the firms risen, benefiting shareholders, but prices have fallen and the quantity and quality of output has increased. Governments have benefited from higher tax revenues and reduced subsidies to loss making firms, leaving more government funds available to tackle poverty (Estache et al, 2000; Bortolotti et al., 2002; Chong and Lopez-de-Silanes, 2004). The increase in service provision is particularly obvious in telecommunications. For example, Fischer et al. (2005) claim that there has been a sharp improvement in access and service quality in telecommunications in Chile since privatisation. Estache et al. (2001) suggest that in Argentina, the price of electricity for residential customers dropped by over one third after privatisation and this decrease was mainly due to an increase in the number of power generators and the result of a more competitive environment. Plane (1999) claims that the privatisation of the Ivory Coast electricity company brought about the use of more efficient technologies, which led to higher productivity gains, making it possible for consumers to pay less for their electricity. In some cases there has been particularly direct evidence of benefits to the poor. One study has suggested that the poorest groups seem to benefit the most from increased productivity and access brought about by privatisation and related reforms (Benitez et al., 2003). Galiani et al. (2005) suggest that in Argentina private sector involvement in the provision of water has led to an increase in the number of households connected to supplies by 11.6% and a resulting fall in child mortality of between 5% and 7%, and by 24% in the poorest municipalities. Similarly, Leipziger et al. (2003) report that better access to infrastructure services, resulting from economic reforms, has played an important part in improving child health.

Claims have been made that any adverse effects on the poor in developing countries resulting from privatisation and market liberalisation programmes have been greatly exaggerated. Typical is the following conclusion: 'There is no evidence that such reforms hurt poor or rural consumers – at least in terms of access to services. Even when service prices increase, the share of poor and rural households with connections does not decrease. And in many cases coverage increases, possibly because connection fees fall once service is no longer rationed. Indeed, case studies show that allowing entry and competition in infrastructure services can dramatically increase services for poor people." (Kessides,2005, p.27). However, while it does seem that privatisation and the arrival of competition has often brought about widespread benefits to all consumer groups in telecommunications, the evidence relating to other infrastructure industries is less compelling. These industries are less conducive to cost-reducing technological change. Notable in this respect is the water sector where competition in the market is ruled out by the economics of water supply and sewerage services, particularly the high costs of building supply facilities and the costs of pumping water and treating sewerage. Also, there has been a tendency to extrapolate from the experiences of one country and region (much of the published research relates to Latin America) to developing economies generally. A conclusion that all income groups in Argentina benefited from efficiency, quality of service and access improvements following the privatisation of utilities (Chisari et al., 1999) and that the poorest groups may have benefited most (Benitez et al., 2003), for example, does not necessarily mean that this result will apply universally. It is to be expected that the result of reforms depend upon the nature and form that they take and especially the local economic and regulatory environment. This turns attention from simply looking at privatisation and market liberalisation as sufficient reforms in themselves to concern with the quality of state regulatory regimes. Moreover, because the poor are consumers and suppliers of labour, the effects of reforms need to consider not just prices and outputs but employment levels, working conditions and wages. A recent study of four Latin American economies suggested that privatisation had had no clear effect on prices, but that there had been adverse distributive effects on the poor because of redundancies in the privatised utilities. Suggestion that the poor still gained because of increased access to better quality services seems to require a judgement about welfare transfers between gainers and losers (McKenzie and Mookherjee, 2003; Kessides, 2005, p.28). Birdsall and Nellis (2002) concluded that of the privatisation programmes they studied most seemed to have worsened the distribution of assets and income, at least in the short term. However, they suggest that this result is less clear for utilities such as electricity and telecommunications because of increased access by the poor to their services.

A number of other studies have also highlighted weaknesses in privatisations and the subsequent state regulation of the new private operators in terms of addressing the needs of the poor. In Manila the Metropolitan Water and Sewerage services was replaced by two concessionaires in 1997. One, Maynilad Water Services, unilaterally pulled out of the concession in 2002. In the case of both concessions, strides were made to expand services to the poor, although at higher prices (Cariño, 2005, p.12). In Sri Lanka privatisation has often preceded the establishment of regulation "reflecting the prominence accorded to fiscal imperatives and leading to unfavourable distributional consequences" (Knight-John, 2005, p.3). A recent study of the welfare effects of utility privatisation in Argentina, Bolivia, Mexico and Nicaragua suggests that prices both rose and fell, but that there were adverse distributional effects on the bottom half of the income distribution because of job losses in the privatised utilities. Offsetting this was an improved quality of services, increased access for the poor and the changed structure of the public finances, which benefited the poor more than others (McKenzie and Mookherjee, 2003).

Similarly, studies by Harris (2003) and Clarke and Wallsten (2002) suggest that privatisation has had a marginal effect in terms of widening the access of the poor to infrastructure. The collection of studies by Latin American scholars in Saha and Parker (2002) provides numerous examples of worsened conditions for the poor and regulatory failings following privatisation and market liberalisation policies in Latin America. The study, by Foster et al. (2001) suggests that reforms in the electricity sector may not have benefited poorer households in rural areas. Clarke et al. (2004) find that connection rates to water and sewerage improved after the introduction of private capital in Latin America no faster than in cities that retained public ownership of their water systems. Other research into the performance of privatised water and electricity utilities in developing countries has found a mixed picture with some improvements, but with competition and regulation proving to be more important than ownership in explaining the performance differences, especially so in electricity generation (Zhang et al., 2003, 2005) and telecommunications (Wallsten, 2001). Consistent with these findings, Gutierrez and Berg (2000) looking at privatised telecommunications in Latin America and the Caribbean, concluded that the quality of regulation is an important determinant of telecommunications density growing quickly.

Calderón and Servén (2004) argue that inequality decreases with an increase in the quantity and quality of infrastructure and that therefore infrastructure development can be a highly effective means of combating poverty. But certain other studies have raised doubts about whether the investment in infrastructure schemes resulting from privatisation has reduced poverty through faster economic growth. Comparing 19 major Latin American and Caribbean countries and two sets of comparator countries (fast expanding East Asian economies and middle income developing countries and 21 industrial economies of the OECD), Calderón and Servén (2005) found that overall neither the quantity nor quality of infrastructure services in Latin America seems to have improved faster than elsewhere. Also, across the region, leaving aside telecommunications, private investment has failed to make good the loss of public sector investment during this period. The overall decline in investment in infrastructure in Latin

America can hardly have been good for economic growth and by implication longer-term poverty reduction. In addition, privatisation of infrastructure has often been associated with reduced employment reflecting over-manning under state ownership (Mitlin, 2004, p.324, provides a number of examples; see also Bortolotti et al., 2002). It is to be expected that many of those made redundant were lower paid workers. Such evidence is also consistent with the evidence from the transition economies of Central and Eastern Europe where privatisation appears to have increased economic efficiency but at the cost of higher unemployment and greater poverty (Obser, 2005, p.260). Overall, the evidence suggests that regulation may have been ineffective in ensuring that privatisation benefited the poorest groups.

This conclusion is supported by evidence from Latin America, often cited as a region where privatisation of infrastructure has benefited the poor, but where serious regulatory deficiencies have been identified: "a persistent complaint is echoed across the region: the weakness of regulation hinders tariff negotiations, prevents erosion of monopoly rents and hinders the sharing of productivity gains with consumers" (Ugaz and Waddams Price, 2003, p.12). The privatisation of telephones in Argentina was accompanied by very weak regulation with overlapping functions between the government department and the new regulatory agency. The outcome of reform seems to have been that most residential consumers gained from telecoms and electricity price changes, but that the poorest received the lowest absolute gains and gained a lower than average proportion of their incomes. In gas, water and sewerage there have been losses across the board with the largest relative losses in income falling on the low-income groups. "In sum, in the case of Argentina the effects of rebalancing in all the utilities seems to be regressive, with the main negative effects on the poorest segement of the population" (Ugaz and Waddams Price, 2003, p.15.)

Elsewhere failures to benefit the poorest have also been recorded. For example, in Ghana since 2003 the Public Utilities Regulatory Commission has tried to focus on social policy, including issues of affordability and ensuring consumers access to safe, adequate, efficient and non-discriminatory services especially for water services (Aryeetey and Ahene, 2005, pp.17-18). However, the World Bank and the IMF imposed an automatic water rate adjustment mechanism on PURC as part of a package of loan conditionalities. This ensured that water rates adjusted automatically as the local currency appreciated or depreciated against the dollar (ibid., pp.18-19). In the Philippines the international financial institutions made electricity reform, including privatisation, a condition for loans and other assistance. The result, it has been suggested, has been reform that has failed to take into account the state of un-readiness of the economy and its needs and has permitted only the Filipino elite and foreign investors to participate in the process (Cariño, 2005, p.5). A recent research report on infrastructure by Kessides (2004) for the World Bank recognised regulatory failures and called for new regulatory safeguards, including safety nets and tariff rebalancing schemes, with pricing policy striking a balance between economic efficiency and social equity.

Where concession agreements are used in which the state contracts out the management of infrastructure services to the private sector, contracts may or may not prioritise poverty reduction. For example, exclusivity clauses in concession agreements can make alternative supply sources, such as community standpipes and private wells, illegal impacting adversely on the poor (Ugaz, 2003, p.84). Service obligations can be built into regulatory contracts to ensure that services are expanded into poorer areas. However, it is just as possible that regulation will exacerbate poverty if such concerns do not weigh highly within regulatory offices, particularly at a time when cross-subsidies are removed after the introduction of competition (for a useful discussion of the issues, see Chisari et al., 2003). Also, the benefits from concessions may be dissipated by small numbers of firms bidding for contracts. This can lead to less beneficial concessions for developing countries and, ex post the inauguration of the contract, less effective regulation of services because of a lack of alternative suppliers for government to turn to in the case of contract default.[2] In such circumstances, the terms and conditions imposed by bidding companies may run counter to a poverty reduction agenda because expanding services to the poor may not be profitable. Also, governments may not recognise the legality of dwellings in shanty towns within and around major cities and,

[2] A number of the large multinational corporations which had been aggressively pursuing business in the developing world before 1997, such as Vivendi and Suez in the water sector and Enron and AES in electricity, experienced project failures and falling share prices (in part reflecting a more general international collapse in stock markets following the pricking of the dot com bubble). In consequence, they have shown much less interest in new infrastructure investments in developing countries (Wolff, 2005, p.320). One of the major operators, Enron, failed completely.

as a consequence, those living in squalid conditions may continue to be deprived of services such as electricity, water and sewerage. However, it is the case that a number of concession agreements have included service expansion targets to benefit the poor, which again highlights the importance of effective regulation, in this case in designing and monitoring concessions.

Where failures exist in tackling poverty issues, the cause may lie not in the objectives of the regulatory bodies but in a failure of regulatory capacity. For example, many regulatory agencies in developing countries have been created in the last decade or so and can be expected to be ill-equipped and staff ill-trained to pursue effectively both economic efficiency and poverty objectives. A recent survey of 13 Asian countries found that 80% of regulators had no access to training and regulatory offices were usually understaffed. The report concludes: "Asia's governments rely too much on under-equipped and unsupported independent regulators to carry out tasks that are beyond their capabilities" (Jacobs, 2004, p.4). In Ghana, a number of new independent regulatory institutions have been created and authorised to carry out regulatory functions in order to protect the public interest and promote fair competition. However, these new institutions have faced major difficulties in attracting key professional staff, as a result of the limited funding they have received (Aryeetey, 2004, p. 318). In Latin America there is often a lack of political support for independent regulation and a lack of commitment to maintaining regulatory independence (Ugaz, 2003). In countries such as Chile privatisation has not been accompanied by sufficient effort to increase competition in the market (Ricardo Paredes, 2003) and competition policy cannot be relied upon in developing economies to control privatised monopolies because competition law is either unformulated, inoperative or subject to political intervention (Mehta et al., 2003). Another area of deficiency seems to be statistical analysis. Without reliable data regulators will find it difficult to regulate effectively. Statistics at the sub-national level appear to be especially inadequate, as was highlighted recently in a study which looked at the availability of statistical data in countries such as Bolivia, Cambodia and Malawi (Paris21, 2004).

Also, regulatory policies may backfire or be "captured". For instance requiring suppliers to provide services to the poor at the same price as to other consumers can undermine any financial incentive to expand services. In Zimbabwe a failure to re-align prices with long-run marginal costs compromised the planned expansion of the electricity system (Mangwengwende, 2002). In Bangladesh further entry into some industries, including electricity, was stopped by government on the grounds that there was already adequate competition (Mehta et al., 2003, p.15). It is difficult not to conclude that rent seeking groups with dominant positions in Bangladeshi markets were instrumental in shaping this decision, providing an example of "regulatory capture".

It is the case that subsidies under state ownership often benefited middle income groups rather than the poor, because they were more likely to have access to mains electricity and water (Estache et al., 2001). For example, in Uganda, US$500m a year was spent on subsidies for electricity provision, but only 6% of the population had access to electricity. This case demonstrates how government subsidies may not be properly targeted to benefit the poor. Similarly, Foster et al. (2001) claim that in India in the late 1990s only one quarter of the subsidies for water services (which amounted to around 0.5% of GDP) benefited the poor. However, it does not follow from this that privatisation and commercial operation will necessarily lead to improved prives for poorer groups. There is evidence that in a number of cases charges, including charges to the poor, have risen sharply. For instance, in Chile water and sewerage rates increased by 40% in privatised utilities compared with about 20% in non-privatised areas (Bitran and Valenzuela, 2003). A concession agreement for water services in Cochabamba in Bolivia collapsed after serious civil unrest against the proposed increase in tariffs. In Guinea a lease contract was not renewed when it expired, in spite of evidence of improved services under private management. This was because of public opposition to the large price rise that followed the introduction of private sector management. In Buenos Aires the cost of connection under the water concession agreement entered into in 1993 amounted to about 20% of annual household income for the poorest groups. In Guiyang, China, people have been required to use gas instead of coal as a domestic fuel, but in doing so they have had to incur the initial cost of a meter. Poor households who cannot afford to have a meter installed have found themselves having to break the law by continuing to use coal (DFID, 2002).

Counterbalanced against this regulators in some countries have adopted pro-poor policies. In particular, Chile has operated a subsidy policy so that subsistence-level water and sanitation services should account for no more than 5% of a household's income and eligibility for subsidies for a wide range of other services has been means tested. In Peru pay phones in rural areas have received subsidies and the poor are more likely to use pay phones. In India, village public telephones and public call offices have been promoted in both urban and rural areas to make telecommunications more accessible to the poor (Garg et al., 2003). In Bolivia in 2001, the Institute for Technical Norms and Standards approved changes in quality standards to allow for low cost infrastructure services to reach poor settlements by making use of a cheaper condominial technology for water and sewerage (PPIAF and WSP, 2001). While the Brazilian Agency of Electrical Energy has decided that consumers should no longer pay for electricity connection charges so as to promote universal service (ANEEL, 2003). Other examples include a recent law passed in South Africa on water services, which states that every household has the right to a certain amount of free water per day, and the introduction in Buenos Aires of a bimonthly charge to spread the cost of new water connections over five years, interest free. This was specifically introduced to make water services more accessible to the poor (although it may have had the side-effect of curbing the expansion of the water network; Alcazar et al., 2000). Further measures were introduced in 2002 including social tariffs which benefit most pensioners and the poor in specific areas.

What is little covered in the existing literature is a discussion of the legal requirements of regulatory offices in developing countries in relation to pro-poor issues. An exception is a recent study of regulation in Ghana, which reveals that the law requires that when negotiating prices the Public Utilities Regulatory Commission takes into account the consumer interest, investor interest, costs of production, the financial integrity of the public utility, the economic development of the country, the best use of natural resources, uniformity of prices across the country, and competition amongst utility companies (Aryeetey, 2004, p.302). However, it is not clear from this long list where poverty reduction features and what weighting, if any, it receives in practice. In other cases it may be that regulators have no specific mandate to pursue the poverty agenda but in reality do so. For example, in Indian utility sectors "poverty alleviation is not on the direct or indirect agenda of regulation… It is not a specified objective of regulation"

(Garg et al., 2003, p.7). However, many regulatory commissions in the electricity sector in India seem nevertheless to have introduced innovative approaches linking electricity access and tariffs to income (ibid., p.9). Government schemes such as the Kutir Jyoti Programme established in 1998/99 exist to encourage electrification of households below the poverty line.

A FUTURE RESEARCH AGENDA

From the above review of the existing literature it is evident that knowledge about infrastructure regulation and its impact on poverty reduction is both patchy and contradictory. In particular, where privatisation has occurred and regulatory agencies introduced, much of the favourable evidence comes from Latin America in the 1990s. However, it is not self-evident that this experience there will be replicated elsewhere and even there regulatory failures have been identified. What seems clear is that a structured research agenda is needed to improve both understanding of the objectives and outcomes of regulation in developing countries in relation to poverty reduction and the effectiveness of regulatory policies. This research should centre on providing answers to the following questions.

1. To what extent do regulators in developing countries actively prioritise access by the poor to vital services and what measures do they adopt to improve access and prevent disconnections for payment failure? Are tariff schedules authorised that prioritise income distribution goals over allocative efficiency?

   There is evidence that some regulators are prioritising services for the poor but the results are uneven. Some regulators are not mandated to pursue poverty reduction, but nevertheless appear to do so, while others may be so mandated but fail to do so. As we have seen from the review of the existing literature knowledge is very limited on the legal requirements of regulators in relation to poverty reduction.

2. How is the affordability issue addressed and how do regulators interface with other government departments concerned with social welfare – is there joined up government on poverty reduction? Are subsidies or cross-subsidies used to

pay for connection costs and to reduce volume charges for low-levels of consumption, for example through the use of "life line" tariffs?

There is evidence that affordability concerns are real with the poor often finding it difficult to afford the improved infrastructure services offered after privatisation. However, as the review of the literature has highlighted, information is contradictory on how well the interests of the poor are being met.

3. What administrative and regulatory capacity exists and how does the resourcing or regulatory agencies impact on the ability to tackle poverty issues?

There is evidence of significant administrative weaknesses in regulatory agencies in developing countries. In particular, regulatory offices tend to be undermanned and lack the necessary regulatory skills and the data bases needed to regulate effectively are absent. The extent to which resource deficiencies thwart the achievement of regulatory policies aimed at helping the poor is unclear, but they might be expected to be significant.

4. To what extent are regulatory offices in developing countries subject to capture and to what extent does this bias regulatory policy against reducing poverty? To what extent do regulators attempt to obtain information from the poor or their representatives so as to ensure that regulatory policies do not ignore their needs?

There is evidence from the literature reviewed that some regulatory offices do endeavour to consult the poor, but it is unclear how universal this policy is. It is particularly unclear whether the views of the poor are influential in the face of better resourced interest groups perhaps with high level contacts within Ministries. Much more research is needed.

CONCLUSIONS

The theme of this paper is that effective and efficient regulation of infrastructure services has the potential to reduce both absolute and relative poverty in developing countries. The benefits can be direct, in terms of addressing affordability and access issues, and indirect by promoting faster economic growth. But to achieve this regulation needs to be directed at promoting "pro-poor" forms of economic development. In the paper we have shown that the existing empirical evidence on the impact of infrastructure regulation on the poor is incomplete and contradictory. The paper has concluded by proposing a structured research agenda with the aim of improving knowledge of the extent to which regulators in lower-income economies pursue poverty reduction.

In 2001 63% of people surveyed in 17 Latin American countries felt that privatization had not been beneficial, compared with 43% holding this view in 1998 (Obser, 2005, p.259). Clearly, there is a growing perception (erroneous or not) that privatisation has failed to bring about the benefits promised and this may well reflect a failure on the part of the new regulatory agencies created to tackle poverty issues. Regulation reform now represents one of the main pillars of the Post Washington Consensus on economic development (Onis and Senses, 2005) and donor support for the design and implementation of regulatory improvements now accounts for about 26% of all development assistance. However, this initiative seems to centre on improving the regulatory climate for private investment, which may not be sufficient to tackle either absolute or relative poverty, at least in the short run. The failure to address poverty issues may lead to policy reversals in developing countries that undermine the reforms intended to raise economic growth, so that the potential "long run" benefits of the Post Washington consensus become irrelevant. Admittedly, the World Bank has not ignored this issue and it has developed the tool of 'output-based aid' (OBA), where subsidies are given to private companies only when expansion of service targets have been met or previously designated needy sections of society have had their needs supplied. Other recommended schemes for encouraging the expansion of services into poorer and rural areas are to build in such requirements to concession contracts, backed by financial penalties for non-compliance. Or companies might competitively bid for infrastructure concessions, where the winner requires the smallest government subsidy to provide basic services in targeted areas. However, while all of these initiatives are to be welcomed, in the absence of a much better understanding of how regulation is actually impacting on poverty, the threat of policy failure remains.

Inequality of access to basic services, which is linked to infrastructure provision, is regarded by many as the basic challenge of development policy (World Bank, 2003a, 2003b). Nevertheless, as this paper has demonstrated, there remain large gaps in our knowledge of how regulators are actually approaching poverty as an issue. To cite Minogue (2005):

> "Development agencies are still inclined to proffer models based on conditions and practices… [from] high income economies, then become frustrated when such models do not seem to work elsewhere, or receive little more than diplomatic lip service. There is a reality gap here between donor ideas of best practice, and the actual legal, administrative, political, and economic processes that exist in low and middle income countries."

The purpose of the proposed research agenda is to identify what exactly lies in the "reality gap" as far as regulation and poverty reduction is concerned. This must include a thorough audit of the objectives and policies adopted in regulatory offices in developing countries and their actual impact on poverty. The research agenda will be taken forward by providing much more detailed coverage than exists currently on if and how regulators of infrastructure services in developing countries attempt to reduce poverty.[3]

[3] In the Centre on Regulation and Competition this audit is taking place through a detailed analysis of the websites of the different regulatory offices and through the use of a questionnaire survey. The results will be published in a later research paper.

REFERENCES

Alcazar, L., Xu, L. and Zuluaga, A. (2000) Institutions, politics and contracts: The attempt to privatise the water and sanitation utility of Lima, Peru, *Policy Research Working Paper* no. 2478. Washington, DC: World Bank.

ANEEL (2003) *Destaques do Governo – Universalização. Metas de universalização.*, *http://www.aneel.gov.br/224.htm*.

Aryeetey, E. (2004) The Institutional and Policy Framework for Regulation and Competition in Ghana, in P. Cook, C. Kirkpatrick, M. Minogue and D. Parker (eds.) *Leading Issues in Competition, Regulation and* Development, Cheltenham: Edward Elgar.

Aryeetey, E. and Ahene, A.A. (2005) *Utilities Regulation in Ghana*, mimeo, Institute of Statistical, Social and Economic Research, University of Ghana.

Benitez, D., Chisari, O. and Estache, A. (2003) Can the Gains from Argentina's Utilities Reform Offset Credit Shocks?, in C. Ugaz and C. Waddams (eds.) *Utility Privatization and Regulation: A Fair Deal for Consumers?,* Cheltenham: Edward Elgar.

Berg, A. and Krueger, A. (2003) *Trade, Growth, and Poverty: A Selective Survey*, *IMF Staff Working Papers* WP/03/30.

Birdsall, N. and Nellis, J. (22003) Winners and Losers: assessing the distributional impact of privatization, *World Development*, vol.31, no.10, pp.1617-1633.

Bitran, G.A. and Valenzuela, E.O. (2003) Water Services in Chile: Comparing Private and Public Performance, *Public Policy for the Private Sector*, Washington, DC.

Bortolotti, B., D'Souza, J., Fantini, M. and Megginson, W.L. (2002) Privatization and the Sources of Performance Improvement in the Global Telecommunications Industry, *Telecommunications Policy*, vol.26, pp.243-268.

Calderón, C. and Servén, L. (2004) The Effects of Infrastructure Development on Growth and Income Distribution, *Central Bank of Chile Working Papers No.270*, Chile.

Calderón, C. and Servén, L. (2005) *Trends in Infrastructure in Latin America*, 1980-2001", mimeo, Washington, DC: World Bank.

Camdessus, M. (2003) *Financing Water for All,* Report of the World Panel on Financing Water Infrastructure, World Water Council and Global Water Partnership, 3rd World Water Forum.

Cannock, G. (2002) *Feedback to regulators from consumers*, APOYO Consultoria report presented at the International Telecommunication Union (ITU) Global Symposium for Regulators, Hong Kong, China, 7-8 December.

Cariño, L.V. (2005) *Regulatory Governance in the Philippines: Lessons for Policy and Institutional Reform*, mimeo, National College of Public Administration and Governance, University of the Philippines.

Chisari, O., Estache, A and Waddams Price, C. (2003) Access by the poor in Latin America's utility reform, in C. Ugaz and C. Waddams Price (eds.) *Utility Privatization and Regulation: A Fair Deal for Consumers*, Cheltenham: Edward Elgar.

Chisari, O., Estache, A. and Romero, C. (1999) Winners and Losers from the Privatization and Regulation of Utilities: Lessons from a General Equilibrium Model of Argentina, *The World Bank Economic Review*, vol.13, no.2, pp.357-378.

Chong, A. and Lopez-de-Silanes, F. (2004) Privatization in Latin America, What does the Evidence Say? *Economía*, vol.4, no.2, pp.37-111.

Clarke, G.R.G., Kosec, K. and Wallsten, S. (2004) Has Private Participation in Water and Sewerage Improved Coverage? Empirical Evidence from Latin America, *World Bank Policy Research Working Paper 3445*, Washington DC.

Clarke, R.G. and Wallsten, S.J. (2002) Universal(ly Bad) Service: Providing Infrastructure Services to Rural and Poor Urban Consumers, *Policy Research Paper 2868*, Washington, DC.: World Bank.

Cook, P. and Uchida, Y. (2005) *Structural Change, Competition and Income Distribution*, mimeo, Centre on Regulation and Competition, University of Manchester.

DFID (2000) *Linking local economic development to poverty alleviation*. London: DFID.

DFID (2002) *Energy for the poor. Underpinning the Millennium development goals*. London: DFID.

Dollar, D. and Kraay, A. (2002) Growth is Good for the Poor, *Journal of Economic Growth*, vol.7, pp.195-225.

Dollar, D. and Kraay, A. (2004) Trade, Growth and Poverty, *Economic Journal,* vol.114, F22-F49.

Estache, A., Gomez-Lobo and Leipziger, D. (2000) Utility Privatization and the Needs of the Poor in Latin America. Have We Learned Enough to Get it Right?, *World Bank Policy Research Working Paper 2407*, Washington DC: World Bank.

Estache, A., Gomez-Lobo, A. and Leipziger, D. (2001) Utilities Privatization and the Poor: Lessons and Evidence from Latin America, *World Development*, vol.29, no.7, pp.1179-98.

Fay, M. and Yepes, T. (2003) Investing in Infrastructure: what is needed from 2000 to 2010, *World Bank Research Working Paper 3102*, Washington DC.: World Bank.

Fischer, R., Serra, P. and Gutiérrez, R. (2005) The Effects of Privatization on Firms: the Chilean Case, in A. Chong and F. López-de-Silanes, *Privatization in Latin America: Myth and Realities*, Stanford: Stanford University Press.

Foster, V., Tre, J.P. and Wodon, Q. (2001) *Energy Prices, Energy Efficiency, and Fuel Poverty*, mimeo, Washington DC.: World Bank.

Galiani, S., Gertler. P., Schargrodsky, E. and Sturzenegger, F. (2005) The Benefits and Costs of Privatization in Latin Argentina: A Microeconomic Analysis, in A. Chong and F. López-de-Silanes, *Privatization in Latin America: Myth and Realities*, Stanford: Stanford University Press.

Galiani, S., Gertler, P. and Schargodsky, E. (2002) *Water for Life: The Impact of the Privatization of Water Services on Child Mortality*, Universidad de San Andrés Working Paper No.54.

Garg, A. and Gutaly, S. (2004) *Regulation in India: Assessing Impact in the Power and Water Sectors* 3rd CRC International Conference. Cape Town, South Africa. 7-9 September.

Garg, A., Kabra, M. and Gulaty, S. (2003) *Regulation in India: An overview and assessment of impact on economic growth and poverty reduction*, mimeo, paper presented to the

International Conference – Challenges to Development: Innovation and Change in Regulation and Competition, 14 October 2003, Manila.

Gutierrez, L.H. and Berg, S. (2000) Telecommunications Liberalization and Regulatory Governance: Lessons from Latin America, *Telecommunications Policy*, vol.24, pp.865-884.

Harris, C. (2003) Private Participation in Infrastructure in Developing Countries: Trends, Impact, and Policy Lessons, *World Bank Working Paper No.5*, Washington DC: World Bank.

Hulme, D. and Cooke, W. (2002) Introduction: different poverties, different policies, *Journal of International Development*, vol.14, pp.667-680.

Jacobs, S. (2004) Governance of Asia Utilities: New Regulators Struggle in Difficult Environments, *The Governance Brief*, issue 10, ADB's Governance and Regional Cooperation Division.

Kelegama, S. (2003) The Poverty Situation and Policy in Sri Lanka, in C. M. Edmonds (ed.) *Reducing Poverty in Asia: Emerging Issues in Growth, Targeting, and Measurement*, Cheltenham: Edward Elgar/Asian Development Bank.

Kessides, I.N. (2004) *Reforming Infrastructure: Privatization, Regulation and Competition*, Washington DC and New York: World Bank and Oxford University Press.

Kessides, I.N. (2005) Infrastructure Privatization: Gone too Far? Or too Early to Tell?, *The PB Newsletter*, www.privatizationbarometer.net/newsletter.

Kirkpatrick, C. and Parker, D. (2003) Infrastructure in Sub-Saharan Africa, *Research Papers on Africa and Development*, Paper 3, London: JBIC.

Kirkpatrick, C., Parker, D. and Zhang, Y-F. (2005) Price and Profit Regulation in Developing and Transition Economies: A Survey of the Regulators, *Public Money & Management*, vol.24, no.5, pp.291-96.

Knight-John M (2005) *Regulatory Impact Assessment: A Tool for Improved Regulatory Governance in Sri Lanka?*, mimeo, Colombo: Institute of Policy Studies.

Knight-John, M. (2004) Competition, Regulation and Regulatory Governance in Sri Lanka, in P. Cook, C. Kirkpatrick, M. Minogue and D. Parker, *Leading Issues in Competition, Regulation and Development*, Cheltenham: Edward Elgar.

Komivese, K., Whittington, D. and Wu, X. (2003) Access to Utilities by the poor: a global perspective, in C. Ugaz and C. Waddams Price (eds.) *Utility Privatization and Regulation: A Fair Deal for Consumers*, Cheltenham: Edward Elgar.

Kuznets, S. (1955) Economic Growth and Income Inequality, *American Economic Review*, vol.45, no.1.

Leipziger, D., Fay, M., Wodon, Q. and Yepes, T. (2003) *Achieving the Millenium Development Goals: The Role of Infrastructure*, World Bank Policy Research Working Paper 3163, Washington DC: World Bank.

Mahmood, I.P. and Rufin, C. (2005) Government's Dilemma: The Role of Government in Imitation and Innovation, *Academy of Management Review*, vol.30, no.2, pp.338-360.

Mangwengwende, S. (2002) Tariffs and subsidies in Zimbabwe's reforming electricity industry: Steering a utility through turbulent times, *Energy Policy*, vol. 30, nos. 11-12, pp.947-958.

Mbabazi, J., Morrissey, O. and Milner, C. (2003) The fragility of empirical links between inequality, trade liberalization, growth and poverty, in R. van der Hoeven and A. Shorrocks, *Perspectives on Growth and Poverty*, New York, Tokyo and Paris: United Nations University Press.

McKenzie, D. and Mookherjee, D. (2003) Distributive Impact of Privatization in Latin America: An Overview of Evidence from Four Countries, *Economia*, vol.3, no.2, pp.161-218.

Mehta, P.S., Qureshi, M.S. and Bansal, A. (2003) Competition Policy and the Poor, in *Competition Policy and Pro-poor Development*, Jaipur: CUTS Centre for Competition, Investment & Economic Regulation.

Minogue, M. (2005) *What Connects Regulatory Governance to Poverty?*, mimo, Centre on Regulation and Competition, University of Manchester.

Minogue, M. (2005) *Apples and Oranges – Comparing International Experiences in Regulatory Reform*, Occasional Lecture 13, Bath: Centre for the study of Regulated Industries, University of Bath.

Mitlin, D. (2004) Competition, Regulation and the Urban Poor: A Case Study of Water, in P. Cook, C. Kirkpatrick, M. Minogue and D. Parker (eds.) *Leading Issues in Competition, Regulation and* Development, Cheltenham: Edward Elgar.

Obser, A. (2005) Privatization and Development, in E.U. von Weizsäcker, O.R.Young and M.Finger (eds.) *Limits to Privatization: How to Avoid too Much of a Good Thing*, London: Earthscan.

Onis, Z. and Sentes, F. (2005) Rethinking the Post Washington Consensus, *Development and Change,* 36(2), pp.263-290

Paris21 (2004) Improved statistical support for monitoring development goals. Summary report on six case studies, *Partnership In Statistics for development in the 21st Century*.

Parker, D. (2002) Economic Regulation: A Review of Issues, *Annals of Public and Cooperative Economics*, vol.73, no.4, pp.493-519.

Parker, D. and Kirkpatrick, C. (2005) Privatisation in Developing Countries: A Review of the Evidence and the Policy Lessons, *Journal of Development Studies*, vol.41, no.4, pp.513-41.

Plane, P. (1999) Privatization, Technical Efficiency and Welfare Consequences: The Case of the Côte d'Ivoire Electricity Company (CIE), *World Development*, vol. 27, no. 2, pp.343-60.

Posner, R.A. (1974) Theories of Economic Regulation, *Bell Journal of Economics and Management Science*, vol.5, pp.335-58.

PPIAF (Public-Private Infrastructure Advisory Facility) and WSP (Water and Sanitation Program) (2001*) New designs for water and sanitation transactions: making private sector participation work for the poor*. Washington DC: World Bank.

Ricardo Paredes, M. (2003) Redistributive impact of privatization and regulation of utilities in Chile, in C. Ugaz and C. Waddams Price (eds.) *Utility Privatization and Regulation: A Fair Deal for Consumers*, Cheltenham: Edward Elgar.

Saha, S. and Parker, D. (2002) *Globalisation and Sustainable Development in Latin America: Perspectives on the New Economic* Order, Cheltenham: Edward Elgar.

Sen, A. (1981) *Poverty and Famines: an Essay on Entitlement and Deprivation*, New York: Oxford University Press.

Smith, W. (2000) *Regulating Infrastructure for the Poor: Perspectives on Regulatory Design*, mimeo, Infrastructure for Development: Private Solutions and the Poor Conference, 31 May-2 June, 2000, London.

Srinivasan, T.N. and Wallack, J.S. (2004) Globalisation, Growth and the Poor, *De Economist*, vol.152, no.2, pp.251-72.

Stigler, J.G. (1971) The Theory of Economic Regulation, *Bell Journal of Economics and Management Science*, vol.2, pp.3-21.

Ugaz, C. (2003) Consumer participation and pro-poor regulation in Latin America, in C. Ugaz and C. Waddams Price (eds.) *Utility Privatization and Regulation: A Fair Deal for Consumers*, Cheltenham: Edward Elgar.

Ugaz, C. and Waddams Price, C. (2003) Introduction, in C. Ugaz and C. Waddams Price (eds.) *Utility Privatization and Regulation: A Fair Deal for Consumers*, Cheltenham: Edward Elgar.

Ugaz, C. and Waddams Price, C. (eds.) *Utility Privatization and Regulation: A Fair Deal for Consumers*, Cheltenham: Edward Elgar.

UN (2000) *Millennium Declaration and Millennium Development Goals*, New York: United Nations.

UNDP (2002) *Developing Good Governance Indicators for Anti-Poverty Program Assessment*, Manila: United Nations Development Program.

Wallsten, S.J. (2001) An Econometric Analysis of Telecom Competition, Privatization and Regulation in Africa and Latin America, *Journal of Industrial Economics*, vol.XLIX, no.1, pp.1-19.

Wegelin, E.A. and Borgman, K.M. (1995) Options for municipal interventions in urban poverty alleviation, *Environment and Urbanization*, vol. 7, no. 2, October.

Winters, A. (2004) Trade Liberalisation and Economic Performance: An Overview, *Economic Journal*, vol.114, F4-F21.

Wolff, P. (2005) Example: Private Funding of Infrastructure in Developing Countries, in E.U. von Weizsäcker, O.R. Young and M. Finger (eds.) *Limits to Privatization: How to Avoid too Much of a Good Thing*, London: Earthscan.

World Bank (1994) *Jordan – Poverty Assessment*. Washington DC: The World Bank Group.

World Bank (1999) *The World Bank Group's Microfinance Institutional Action Plan 1999*. Washington DC: World Bank Group.

World Bank (2001) *World Development Indicators, 2000/200*1, Washington DC: World Bank.

World Bank (2003a) *Private Participation in Infrastructure: Trends in Developing Countries in 1990-2001*, Washington DC: World Bank.

World Bank (2003b) *World Development Report 2004: Making Services Work for Poor People*, Washington DC: World Bank.

World Bank (2004) *Doing Business in 2004: Understanding Regulation*, Washington DC: World Bank/Oxford University Press.

Zhang, Y.-F., Parker, D. and Kirkpatrick, C. (2003) 'Electricity Sector Reform in Developing Countries: An Econometric Assessment of the Effects of Privatisation, Competition and Regulation', *Working Paper No. 31*, Centre on Regulation and Competition, Institute for Development Policy and Management, University of Manchester.

Zhang, Y.-F., Parker, D. and Kirkpatrick, C. (2005) Competition, Regulation and Privatisation of Electricity Generation in Developing Countries: Does the Sequencing of the Reforms Matter?, *The Quarterly Review of Economics and Finance*, vol.45, pp.358-79.

Zollner, A. (2005) Women's Rights under Privatization: The Example of Bulgaria, Poland , Russia and the Ukraine, in E.U. von Weizsäcker, O.R. Young and M. Finger (eds.) *Limits to Privatization: How to Avoid too Much of a Good Thing*, London: Earthscan.