

Resource Rents, Redistribution, and Halving Global Poverty: The Resource Dividend

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This paper considers the proposal that each country distribute its resource rents directly to citizens as a universal and unconditional cash transfer, or *Resource Dividend*, and estimates its potential impact on global poverty. Using a global dataset on resource rents and the distribution of income, I find that if every developing country implemented the policy then the number of people living below the World Bank's \$1 a day global poverty line would be halved. A range of further practical benefits are discussed, including the amelioration of the resource curse in resource-rich countries, and the incentive that the policy provides to informal workers to register with the fiscal system. Administrative and political challenges that the policy would face are discussed, and it is argued that in most cases they would not be insuperable.

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“The meek shall inherit the Earth, but not its mineral rights”

J. Paul Getty

1. Introduction

In this paper I ask what would happen if, contrary to J. Paul Getty’s prediction, mineral rights were in fact distributed more equitably. In particular, I consider the scheme under which each country taxes the rents due to their natural resources, and distributes this rent directly and unconditionally back to every adult citizen on an equal basis. I call this scheme the Resource Dividend. Versions of it have appeared from time to time in different literatures going back to Thomas Paine in 1795, with recent proposals including the distribution of oil revenues in Iraq. But two developments make its more general application of particular current relevance. First, resource nationalism and resource ownership rose on policymakers’ agendas amid the dramatic rise in resource prices up to mid-2008. Second, the first goal of the Millennium Development Goals, adopted by the United Nations in 2000, is to halve global poverty at the \$1 a day line from its 1990 level by 2015.² I find that if enough poor countries were to adopt the resource dividend then this would be sufficient to achieve the first Millennium Development Goal: extreme global poverty would be cut by half.

While I estimate its global impact, the Resource Dividend is a national, not international policy, and the arguments for the policy and the obstacles it would face are domestic in nature. In recent years versions have been proposed by development economists for Iraq (Birdsall and Subramanian 2004) and Nigeria (Sala-i-Martin and Subramanian 2003), while a group of Bolivian economists and policy makers proposed a similar policy, funded by one third of gas revenues, in their country (Durán et al. 2007). These authors cite the possible advantages of the scheme in the context of substantial resource wealth, where direct distribution of revenues may

² The “\$1” global poverty line was in fact \$1.08 in 1993 PPP international dollars. Using data from the 2005 International Comparison Program this has been updated to \$1.25 in 2005 PPP international dollars (Chen and Ravallion 2008). When I refer to the \$1 a day poverty line I will be referring to this line of \$1.25 at 2005 prices.

help to alleviate the resource curse. In addition to this argument I discuss potential advantages of the policy for all countries, including those with modest resource wealth. First, as already mentioned, it would substantially reduce poverty. Second, by being levied only on rents, the scheme implies none of the economic distortions or efficiency loss that other redistributive schemes may risk. Third, it provides an incentive to informal workers and individuals with little or no formal interaction with the state to register with the fiscal system. Finally, there is a moral and legal argument that by the nature of rents, no individual has a special claim to them, so the only morally defensible distribution is an equal distribution.

The calculations presented here also engage with broader debates on poverty reduction. The finding that the resource dividend can halve global poverty challenges the widespread view that efforts to reduce global poverty must focus exclusively on aggregate growth. Versions of this view are to be found in Dollar and Kraay (2002), Bhalla (2002), and Collier (2007), in addition to much of the popular press. I do not dispute the view that growth is important and can reduce poverty, but my findings demonstrate that even a very moderate and non-distortionary redistributive scheme can have a major impact on poverty, even in the absence of growth.

This is important for two reasons. First, the scheme therefore offers hope to those countries that have struggled to grow. While many countries have found growth to be an “elusive quest” (Easterly 2001) and face a variety of traps and challenges to growth (Collier 2007), the Resource Dividend is in principle a simple policy choice. Second, it also offers hope to those countries in which growth has had little or no impact on poverty. For instance, in India, according to the World Bank (Chen and Ravallion 2008b), there were 421 million people living below the international \$1 a day poverty line in 1981, and 456 million in 2005 – over one third of the global total – despite per capita incomes in India growing by 135 percent over the period.³ Given population growth, this represents a decline in the poverty headcount from 60% to 42%, but the failure of growth to reach 450 million people has to be of great concern. For these poor people growth has not been the solution to poverty, and additional measures are required. I find that the

³ There is some debate on levels of poverty in India (see Deaton and Kozel, 2005). Using a different poverty line, Sundaram and Tendulkar (2008) estimate the number of poor to stay constant over 1983 to 1993/94, but to decline from 287 million to 274 million over 1993/1994 to 1999/2000 (the data collection procedure changes in 1993/94 making the estimates for 1983 and 1999/2000 not directly comparable). A decline this modest would not undermine the proposition that growth has had an unacceptably small impact on poverty.

Resource Dividend in India would reduce poverty from 42% to 20%, a dramatic drop despite India's relatively modest natural resource base.

I do not ask whether the Resource Dividend is the optimal way to spend resource revenues. Van der Ploeg and Venables (2008) estimate the optimal spending of a windfall between public infrastructure, building up a Sovereign Wealth Fund, paying down foreign debt, and paying cash dividends to citizens, when citizens are credit-constrained and the interest rate is increasing in the amount of foreign debt (due, for instance, to perceived default risk). While I do not consider alternative ways of spending resource revenues, the poverty-reduction benefits described here set a threshold for other policies in the sense that an alternative form of expenditure can be optimal only if it improves social welfare by more than the Resource Dividend. The Resource Dividend itself would be expected to raise social welfare as long as the social welfare function is concave in individual incomes, or poverty reduction is valued as a goal in itself.

The Resource Dividend also has a convenient "automatic stabilizer" property. High natural resource prices tend to coincide with high food prices, partly through the increased cost of inputs. High food prices tend to increase extreme poverty, and in mid-2008 the World Bank (2008a, b) estimated that increased food prices could undo 7 years of poverty reduction, pushing another 100 million people into "deeper poverty". But the fact that food prices rise with natural resource prices implies that the magnitude of the resource dividend is likely to rise with food prices, and that the Resource Dividend would therefore be greatest when it is most needed.

In the next section I briefly discuss the history of the idea and in the process make the philosophical and moral argument behind the policy. Section three presents data and results. Section four discusses the feasibility of the policy and how it might be administered, and a range of arguments for and against it including the possibility that it may ameliorate the resource curse. Section five concludes.

2. On The Idea of the Resource Dividend

The idea that natural resources belong to all the citizens of a nation, and that no individual or privileged group of individuals should have the exclusive right to enjoy rents from natural resources, has a long pedigree. An early and important contribution to the debate is Thomas Paine's pamphlet *Agrarian Justice*, written in 1795. Paine started from the premise that "the earth, in its natural, cultivated state was, and ever would have continued to be, *the common property of the human race*. In that state every man would have been born to property" (emphasis in original). Paine argues that the institution of private property, while leading to massive increases in the productivity of land, at the same time "has dispossessed more than half the inhabitants of every nation of their natural inheritance, without providing for them, as ought to have been done, an indemnification for that loss." He accepts that land owners should enjoy the benefits of the investments they have made in productivity improvements, but argues that they owe a *ground rent* on the land to indemnify non-land owners for their loss of the use of the land. But in contrast to the prevailing fate of resource revenues today, his conclusion is not that the government should receive this rent. Instead, he argued that the ground rent paid by land owners be used to fund a payment of a lump sum to every individual when they reach age 21, and an annual pension for everyone from the age of 50, in recognition of their loss of property.

The core idea that natural resources belong in the first instance to all citizens of a nation has been behind the battles for nationalisation of oil and gas resources in numerous countries and, more widely, the fact that in almost all countries national governments own subsoil resources (see Mommer 2002).⁴ This view is also codified in numerous international human rights treaties, as described by Wenar (2007, p. 14). Both the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social, and Cultural Rights state in their Article 1 that "All peoples may, for their own ends, freely dispose of their natural wealth and resources." 151 of 192 UN members have adopted at least one of these treaties. Similarly, Article 21 of the African Charter on Human and Peoples' Rights states that "All peoples shall freely dispose of their wealth and natural resources. This right shall be exercised in the exclusive interest of the

⁴ The only major exception is the US, where subsoil resources on private land belong to the landowner. Even in the US, subsoil resources on federal land and offshore belong to the federal government.

people. In no case shall a people be deprived of it.” Finally, the (US-approved) Iraqi constitution of 2005 states that “Oil and gas are the property of the Iraqi people in all the regions and provinces” (Article 108).

The first proposal I have come across for a scheme like the RD for oil revenues was made by the Financial Times journalists Samuel Brittan and Barry Riley (1978, 1980), responding to the discovery of British North Sea oil. They wrote, “The simplest and also the wisest answer to the question ‘What should we do with the state’s oil revenues?’ is ‘Give them to the people’” (1980, p. 1). Brittan and Riley’s proposal, which they called the *people’s stake*, was to offer each British citizen an equal share in oil revenues. The rights to this share in the income stream would be transferable, and therefore capitalizable on the stock market.

The RD considered here differs from Barry and Riley’s *people’s stake* in that the rights to the revenue stream are not saleable, and they end when a person dies. While one would presumably be able to borrow on the strength of the revenue stream, its termination at death ensures that future generations receive a share as long as the revenues last. It is thus a “basic income,” an unconditional regular cash transfer, funded by resource revenues. Such a scheme has been proposed for Nigeria by Sala-i-Martin and Subramanian (2003) and for Iraq by Birdsall and Subramanian (2004), while a similar scheme, funded by a one-third share of gas revenues, has been proposed by Durán et al. (2007) for Bolivia. The closest existing scheme is Alaska’s Permanent Fund Dividend. The Permanent Fund receives at least 25 percent of all revenues received by the state government from mineral extraction in Alaska, and a dividend from this fund is given to all those have resided in the state for at least one calendar year. The dividend is calculated as half of the Fund’s income averaged over five years, divided by the number of eligible recipients. In most years it has lain between \$600 and \$1,500.⁵

Recently there has also been interest in a “cap and dividend” scheme for carbon emissions. The organization Cap and Dividend (www.capanddividend.org), for instance, proposes a cap on sales of fossil fuels, where permits are auctioned and the proceeds are distributed to individuals on an

⁵ Alaska Permanent Fund website, “The Permanent Fund Dividend”:
<http://www.apfc.org/home/Content/alaska/dividendPrgm.cfm>.

equal per capita basis. Under this scheme the global atmosphere, which is a public good, is seen as a global commons to which every individual has an equal claim.⁶

A related, but far more radical, idea is Pogge's (2001) *Global Resource Dividend* (GRD). Under the GRD a small (and unspecified) share of the value of natural resources *globally* is taxed in order to fund a targeted program of redistribution towards the global poor. The idea behind the scheme is that "those who make more extensive use of our planet's [limited natural] resources should compensate those who, involuntarily, use very little" (p. 66). In contrast, the RD that I consider here is strictly of national scope within each country (although the hope is that many countries would adopt it). Compared with the present scheme, Pogge's GRD has three drawbacks. First, since it is intended to be targeted at the poor, it would face enormous administrative challenges in determining who the poor are. Later I discuss the relative merits of universal and targeted schemes. Second, it would require international coordination, which is also administratively very difficult. Third, and perhaps most importantly, it also faces the political challenge of persuading countries that they should give up ownership rights of the natural resources on their territory, which rights, as we have seen, are enshrined in numerous international human rights treaties.

It should be observed that there is no conflict between the view that natural resources belong to all citizens of a country and the view that private actors who realize the value of natural resources, through exploration, extraction and processing, should be paid for their efforts. It is therefore not the *revenues* from the natural resources that properly accrue to all citizens, but the *rents*, defined as the value of the resource less the competitive price of inputs required to realize that value. In the data I use below on resource rents the cost of extraction and a normal return to capital employed are subtracted from total revenues. As I discuss later, different forms of taxes, bonuses, concession fees, royalties, equity shares and other mechanisms for splitting revenues are possible.

⁶ Reported in USBIG (2008).

3. Data and Results

The Data

Calculating the effect of the RD requires two types of data: for each country one needs estimates of the value of resource rents, and the distribution of income. The World Bank provides estimates of resource rents as a share of GDP up to 2006, covering 15 different natural resources,⁷ where rents are calculated as price minus average extraction cost times the quantity extracted (Bolt, Matete and Clemens, 2002).

Data on distributions of per capita household income or consumption are from the World Bank's Povcalnet website; for convenience I shall refer to both income and consumption distributions as income distributions.⁸ This website provides distributional data for 115 developing countries, based on income groups derived from household surveys.⁹ The website uses the software program Povcal¹⁰ which estimates Lorenz curves using the Generalized Quadratic (GQ) method and the Beta method (Datt, 1998); when both estimates are valid, it chooses the curve with the better fit. For countries with fewer than 50 million inhabitants I use the income deciles reported by the website. For the 17 countries with populations greater than 50 million I use the estimated Lorenz curve to divide the population into 1000 income groups.¹¹ The largest income groups in the overall distribution therefore contain under 5 million people, or less than one thousandth of the total population of 5.18 billion of my sample of countries. These comprise 96% of the population of all low- and middle-income countries in 2005.

⁷ Natural gas, hard coal, lignite, oil, forestry, bauxite, copper, gold, iron ore, lead, nickel, phosphate, silver, tin and zinc.

⁸ <http://iresearch.worldbank.org/PovcalNet/jsp/index.jsp>, downloaded December 2008. The mixing of distributions produces unavoidable non-comparability; see Anand and Segal (2008) for discussion of this and other problems in global distributional data.

⁹ The website states that it covers 116 countries, but the list contains only 115.

¹⁰ Povcal was written by Shaohua Chen, Gaurav Datt, and Martin Ravallion. It can be downloaded from <http://go.worldbank.org/YMRH2NT5V0>.

¹¹ The 17 countries are Bangladesh, Brazil, Democratic Republic of the Congo, China, Egypt, Ethiopia, India, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, Russian Federation, Thailand, Turkey, Vietnam. China, India and Indonesia are further divided into rural and urban areas. Following Chen and Ravallion (2008b), I use different PPPs for rural and urban households, calculated on the basis of price differences implicit in domestic rural and urban poverty lines.

I use the World Bank's "\$1-a-day" poverty line, which is PPP\$1.25 at 2005 PPP prices, or PPP\$38 per month (Chen and Ravallion 2008b).¹² Chen and Ravallion estimate that 25.2% of the population of the developing world lives below this poverty line in 2005. The data I use from Povcalnet are based on the same sources as Chen and Ravallion, but while Chen and Ravallion are able to use unit record data, the Povcalnet data are based on coarser aggregations of income groups. On the basis of the Povcalnet data I find that 25.6% of the population are below the poverty line, suggesting that the relative coarseness of the data makes only a small difference in the aggregate.

Incomes in the poverty data are benchmarked to 2005, but estimates of resource rents go up to 2006. Following the Alaska Permanent Dividend Fund, I calculate the RD on the basis of average rents over a five-year period, and I use the most recent rents data by taking the average share of rents in GDP over 2002-2006. Since incomes are for 2005, I multiply this by per capita GDP in 2005 (at 2005 PPP\$) to calculate the RD. The median value of the 2002-2006 average for all 115 countries is 1.6%. Only 81 countries have non-zero resource rents, and their median share is 5.1%.

What is the effect of using incomes in 2005, but the rent-share of GDP up to 2006? Commodity prices rose over the period, and since resource rents are positively correlated with commodity prices, the RD would be smaller if it were calculated over 2001-2005. However, if we are interested in the potential impact of the RD today and in the near future, the more recent rent share is closer to likely current values. Writing in early 2009, commodity prices remain historically very high even in the midst of a major global slowdown. The IMF commodity price index in US\$ peaked at 203 in the second quarter of 2008, falling to 118 in the fourth quarter of 2008. But even after this fall it remained double the level of 58 in 2001. The five-year averages are 85 for 2002-2006 and 72 for 2001-2005. Thus even the 2002-2006 average is far lower than the level at the end of 2008, after its dramatic decline. This suggests that it will be a better

¹² Chen and Ravallion (2008b) choose this poverty line because it is "the mean of the national poverty lines for the poorest 15 countries in terms of consumption per capita", at 2005 PPP\$.

approximation to the value the RD would take today and in the near future than the 2001-2005 average.¹³

Calculations

I perform two exercises in addition to estimating current poverty. First, I simply add the RD to everyone's income and count the number of people falling below the poverty line.¹⁴ This calculation, however, assumes that no extra taxes are levied on those who were below the poverty line. As I discuss below, if a government is already taxing resource rents then the expectation will be that other taxes will be raised to compensate for the lost resource revenues. Since the very poorest rarely pay any taxes it is not entirely unreasonable to assume that these taxes will not fall on those below \$1.25 a day, which is the implicit assumption in the first calculation. But as a robustness test I also perform a calculation where each person is assumed to pay taxes proportional to their post-RD incomes, at a rate equal to the share of rents in GDP. So if rents are 4 percent of GDP and this implies a RD of PPP\$10 per month, then in this second calculation I add PPP\$10 to each person's income and subtract 4 percent from the total. The results are presented in Table 1, and kernel density estimates of the three global (developing country) distributions are in Figure 1.¹⁵

I estimate the number of people living below the extreme poverty line to be 1,327 million, or 25.6 percent of the population of the developing world. Assuming that the poor do not pay taxes, the RD cuts the number by 55 percent to 600 million, or 11.6 percent of the population. If the poor pay tax proportional to income as described above, the number is 741 million or 14.3 percent, a drop of 44 percent. Thus depending on the assumption regarding taxation, the RD cuts poverty by between 44 and 55 percent. The World Bank (Chen and Ravallion 2008b) estimate global poverty in 1990 at 1,813 million, or 41.6 percent of the population; thus either assumption implies immediately achieving the first Millennium Development Goal of halving poverty from

¹³ This is equally true if one uses the IMF's commodity price index in terms of IMF Special Drawing Rights rather than US\$, although the precise numbers differ.

¹⁴ I envisage the Resource Dividend being paid only to adults, so dividing resource rents among all people including children is equivalent to assuming that on average the poor have the same household composition as the non-poor. To the extent that poor households have a lower adult to child ratio, the impact on poverty will be overestimated.

¹⁵ The second peak in the global distribution with the RD is due to Iran and Russia, with RDs of respectively PPP\$311 and PPP\$319.

its 1990 level (either in numbers or as a share), and indeed may halve poverty from its much lower 2005 level.

The reduction in poverty is dramatic. How is it distributed across countries? Nine countries reduce poverty by more than 10 million people with the RD.¹⁶ Of these nine, five countries have resource rents comprising less than 6 percent of GDP. These five – Brazil, China, India, Pakistan and South Africa – account for 54 percent of the total population of all developing countries and 67 percent of the poverty reduction due to the RD. Poverty reduction due to the RD is therefore not primarily due to resource-rich countries.

That such a large reduction in poverty can be produced by redistributing a relatively modest share of GDP may be surprising. However, it should not be. Consider the impact of social spending in the European Union. At national poverty lines, 16 percent of the population of the EU15 were living in poverty in 2003. But in the absence of any social payments other than pensions (which can be considered intertemporal, rather than interpersonal, transfers), this figure would have been 25 percent; with no social payments including pensions, it would have been 39 percent (Guio 2005, p. 4). Cash benefits excluding old-age payments in these countries comprised 6.6 percent of GDP (calculated from European Commission, 2008),¹⁷ just slightly higher than the cost of the RD in the five countries that account for two-thirds of the estimated poverty decline. In terms of relative size and impact on poverty, for most countries there is therefore nothing particularly radical about the RD as a redistributive policy.

Table 2 provides country-specific estimates for seven large countries that contain large numbers of poor people. Figures 2 to 4 provide kernel density estimates of the three with the largest number of poor – China, India and Nigeria – and I now discuss these countries in more detail.

¹⁶ Brazil, China, India, Indonesia, Nigeria, Pakistan, South Africa, Uzbekistan and Vietnam.

¹⁷ According to European Commission (2008), in the EU15 in 2005 total means-tested cash benefits were €140,635m and non means-tested cash benefits €1,688,555m (p. 24). Old age payments (pensions) were €1,138,041m (p. 62). GDP was €10,326b (p. 142) so total cash payments comprised 17.6 percent of GDP, while non-old age cash payments comprised 6.6 percent of GDP.

India, China and Nigeria

Figure 2 shows the income distributions for India. From the point of view of reducing global poverty, India is the single most important country in the world. It contains the largest number of poor people – I estimate it at 455 million, or 34 percent of the world's total – and, according to Chen and Ravallion (2008b), the number of poor people in 2005 was slightly higher than their earliest estimate in 1981. This is all the more surprising given that per capita incomes in India grew by 135 percent over the period.

India is not a resource-rich country. The World Bank estimates that resource rents comprised an average of 4.2 percent of GDP over 2002-06, due mainly to oil, coal, gas, and iron ore, in descending order. This amounts to a RD of only US\$2.6 per person per month. Yet even at this very modest level, I find that the RD reduces poverty by 51 percent, from 41.6 percent of the population to 20.4 percent. If the poor pay increased tax, poverty drops by 41 percent to 24.4 percent of the population. The dramatic impact of the RD despite its very low US\$ value is due to its much greater value in real terms when spent in India, where US2.6 is equivalent to PPP\$10 in rural areas, and PPP\$6.6 in urban areas. Thus this modest redistributive measure would achieve far more in terms of poverty reduction than 24 years of rapid growth.

Figure 3 shows the income distributions in China, the most populous country in the world and the country with the second largest number of poor. Rents are dominated by oil, with modest amounts of coal and gas, and in all they comprise 5.2 percent of GDP. Like India, China is not a resource rich country. Yet the RD virtually eliminates poverty in China, which I estimate at 16.2 percent in 2005, whether the poor pay increased taxes or not.

Figure 4 shows the income distributions for Nigeria, which illustrate an interesting point. Rents comprise 51 percent of GDP because Nigeria is both a large oil producer and a very poor country, with a poverty rate of 64.4 percent. These rents, and therefore the RD, amount to PPP\$49 per person per month, which is more than enough to eliminate extreme poverty. However, when I simulate resource rents being recouped by the government in tax, this implies a 51 percent tax. In practice, it is not plausible that the Nigerian government either could or should

take such a large share of GDP in tax. Reliable data on the value of Nigerian oil output, and the quantity and composition of actual government expenditure, are not available, so one cannot be sure how much of this estimated 51 percent rents is currently going to the government, or how it is spending it. But if Nigeria were to implement the RD and to raise some quantity of taxes from the economy, one would expect it to raise less than 51 percent of GDP. I calculate that if the tax were no more than 30 percent of income, then the RD with tax would also result in no Nigerian falling below the extreme poverty line.

4. Discussion

We have seen that the RD can have a large impact on poverty, and in Section 2 I indicated that it is consistent with the notion in international law that resources belong to “peoples”. The special nature of rents also, however, leads to both an efficiency argument and an ethical argument for the RD. Rents are, by definition, the value of output that remains after factor inputs have been paid their market price. This implies that taxing rents has no impact on behaviour, and is therefore non-distortionary, unlike most existing forms of taxation. Taxing rents is therefore efficient. But the definition of rents also implies that no individual can be said to have a special moral claim to them, since those who helped to produce the rents have already been paid their market rate. It therefore seems plausible that the only fair distribution of resource rents is an equal distribution between all owners of the resource, such as is guaranteed by the RD.

These points indicate the attractiveness of the RD in the abstract. But its implementation would engage with a range of issues in developing countries and involve a number of practical challenges, to which I now turn.

Administrative feasibility and weak government

The most obvious doubt regarding the RD is its feasibility. Implementing the policy would involve two separate procedures: collecting resource rents, and distributing them. I envisage the two processes being managed by an independent government agency whose sole purpose is to

collect rents and disburse them to individuals, and I now briefly discuss how such an agency could operate.

How are rents extracted from natural resources? Some resource-rich countries already have national oil or gas companies that manage exploration, extraction and processing. But in most cases these companies act with some form of partnership with foreign companies, which provide technology, management capacity, and risk sharing. As long as private or foreign companies own any share of resource projects, the extraction of resource rents involves some form of taxation of these companies. The standard way to ensure that companies do not keep rents is through an open and competitive bidding process (see Winer and Roule, 2003, p. 166 for a discussion). If the process is fully competitive then taxes, bonuses, concession fees, royalties, equity shares and other mechanisms will ensure that rents remain with the ultimate owner of the resource, i.e. the state. While in many cases bidding processes are not fully competitive, in practice most international oil and mining companies make no more than normal profits, suggesting that in most cases countries are successful in retaining risk-adjusted rents due to their resources.

There are, of course, cases where developing country governments lack the capacity to set up such a process and to bargain effectively with large international companies. This is potentially a grave problem for countries with very weak governments, which may require external assistance.

The disbursement of the dividend is potentially more challenging than collecting revenues. Many developing countries lack strong administrative capacity, and have limited reach across their territory. This has led to the concept of the “Swiss cheese state”, according to which the state has little or no legal or bureaucratic presence in parts of the territory (the holes in the cheese). O’Donnell (1993, p. 1359) cites examples in Latin America including the highlands in Peru, Amazonia in Brazil, and parts of the centre and northwest of Argentina, where the rules and institutions governing society have little connection with the national government. UNDP (2007,

p. 34) similarly argues that Bolivia has a “state ‘with holes’”, and that in these “holes” the state “negotiates legal authority with social, indigenous, local and regional organizations.”¹⁸

That the state is barely present in parts of a country’s territory might suggest that it would be difficult to distribute a universal cash benefit. But with recent technological advances the RD requires relatively little infrastructure. Many people in very poor countries use inexpensive cell phones to manage bank accounts, particularly for remittances from relatives abroad. As Ratha et al. (2007, p. 5) report in a World Bank study, “mobile banking and partnerships with cell phone companies can potentially extend remittance services to millions of people in remote, rural areas,” citing cases in the Philippines, Kenya, and India.

With this technology it would be cheap and uncomplicated to ensure every citizen had a bank account into which their Dividend could be deposited. Beyond this infrastructure, all that is required is a secure list of citizens. But this is no more than an electoral roll, and most countries, including many undemocratic countries, already have such a roll. The administrative requirements of the RD are thus minimal.

Indeed, motivating the government to fill in the administrative holes in its territory in what are typically highly informal economies is a positive advantage of the RD. Moreover, individuals in the informal sector are typically reluctant to join the formal sector because it would entail having to pay taxes. The RD provides a positive incentive to enter the fiscal system, extending the scope of the state and facilitating future reforms of the fiscal system more broadly, including tax collection.

The RD may also make a difference to the amount of leakage between the receipt of revenues and their being spent. Management by an independent agency would imply that resource revenues would be kept separate from government expenditure budgets. They would therefore not be subject to many of the usual mechanisms of corruption, such as over-bidding for government contracts. But more importantly, transparency implies that all citizens could see how

¹⁸ In the cases of Bolivia and Peru the division between the national state and the “holes” is associated with ethnic divisions, but this less clear-cut in Brazil, and is certainly not the case in Argentina. Thus ethnic divisions may help to fragment the state, but they are not necessary.

much money were being taken in, and therefore how much money should be coming out, allowing them to hold the agency to account.

Here a successful experiment from Uganda, described in Collier (2007, p. 150), gives reason for optimism. The Ugandan government found that only 20 percent of the money that was being sent to primary schools, other than for teachers' salaries, was actually reaching the schools. They came up with a novel plan: whenever the government released money for schools it informed the local media and sent a poster to each school stating what it should be receiving. Three years on they found that 90 percent of the money was getting through. The lesson is that when people know what they are due, it is much harder for corrupt individuals to keep it from them. This is one argument for the current wave of transparency initiatives, including the Extractive Industries Transparency Initiative. The present proposal fits this trend well: the quantity of the RD would be public knowledge, published in the popular press, and individuals would immediately know if they were being short-changed.

A further challenge for resource revenues concerns their high volatility. For countries with large resource revenues this volatility often proves a challenge to rational expenditure policies, as expenditures planned during periods of high prices become difficult to reverse when prices and revenues fall. Revenue volatility is difficult to manage for both the public and private sectors, but Collier and Gunning (1996, 1999, 2000) argue that private agents (households and businesses) deal with price volatility better than governments. They find that private agents save out of windfalls as much as governments, while governments are prone to the additional risk of making very low-return investments, and committing themselves to unsustainable budgets that turn into problematic deficits.

Allowing households to manage price volatility does not, of course, mean that the government can wash its hands of the affair: macroeconomic policy will still have to take account of the ebb and flow of resource revenues in the private sector. On the fiscal side, a rise in resource revenues will typically lead to a rise in tax take, holding tax rates constant. Fiscal volatility will thus be diminished, but not eliminated, relative to the situation where the treasury is the direct recipient of resource revenues. Households' demand for money, foreign and domestic assets, and imports

will also vary as resource income varies, and monetary and exchange rate policy will have to take account of this variation (for discussion see Collier and Gunning, 1999, pp. 37-42).

One potential difficulty for the RD must be acknowledged. The discussion so far has assumed that the governments would be able to recoup lost resource revenues by raising other taxes. This is rather a strong assumption as raising taxes is difficult. Baunsgaard and Keen (2005) examine countries that have lost tax revenues by liberalizing trade, and ask how much of the lost tax has been recouped through other sources of government revenue. They find that middle-income countries recoup in the order of 45–60 cents for each dollar of lost trade tax revenue, but that low-income countries typically recoup no more than about 30 cents of each lost dollar. This would evidently be a challenge for a government that relied substantially on resource revenues. On the other hand, as we saw in the case of Nigeria, if resource rents comprise a very large share of GDP then the government probably should not be collecting tax revenues to the full value of the resource rents anyway.

Political feasibility

Even if the RD is administratively feasible, the question remains whether it is politically feasible. The scheme is a potentially-large redistribution, in the first instance from the government to individuals. If it is compensated by tax increases, and those taxes are not actually regressive, then it effectively becomes a transfer from those with income above the mean to those with income below the mean, which are necessarily in the majority (given non-zero initial inequality). If it is not compensated by tax increases then it is a transfer from whoever received the benefits of government spending to everyone else, and in most developing countries such benefits accrue disproportionately to those higher in the income distribution. The scheme will only fail to benefit a majority in the unlikely case that the majority are already benefiting from government expenditures by more than they would benefit from the RD, and the RD causes these expenditures to be cut. This is a reason to expect the policy to be politically popular.

Incumbent governments, on the other hand, are unlikely to be drawn to the scheme for the obvious reason that it eliminates an easy-to-collect source of revenue. It therefore seems likely

that it could only be enacted in countries where the political system responds positively to popular demands. In a democracy, for instance, an opposition party may decide that losing resource revenues for the treasury is a price worth paying to win an election. But even most non-democratic governments depend on a substantial amount of popular support, and under some circumstances such a government may decide that such a popular measure may increase the chance of political survival. As a first cut, however, one would expect it to be more likely in a democracy than a non-democracy.

In resource-rich countries (discussed further below), the common sentiment of resource nationalism may increase the political popularity of the RD, over and above the fact that the Dividend would be higher in such countries. Most oil exporters, for instance, have experienced painful conflicts with foreign oil companies (and their home governments in rich countries) over control of oil reserves in the process of nationalisation, and their people thus feel a strong sense of ownership. The sentiment that it is “our” oil leads many oil-rich countries to subsidize petroleum products, and the withdrawal of such subsidies is often met with violent popular resistance. The RD, as a transparent form of distributing revenues to everyone, would satisfy this sense of entitlement. Indeed, if it makes it politically easier for governments to withdraw highly inefficient and regressive fuel subsidies then this would be a further argument in favour of the RD.¹⁹

The Resource Dividend and the Resource Curse

Natural resource wealth is hard to manage. According to the *resource curse* thesis, countries for which natural resources comprise a large share of the economy suffer from poor rates of development. As already discussed, the present proposal is not intended solely for countries with particularly large resource sectors, but it is of obvious applicability to those countries. Moreover, as I now discuss, the RD may help such countries by eliminating some of the mechanisms behind

¹⁹ In Bolivia, for instance, Requena et al. (2004, p. vi) write that “the elimination of hydrocarbons subsidies is one of the policies that has met with the fiercest opposition from society and is therefore avoided by the government, in view of the repercussions this may have on the population and productive sectors.” Coady et al. (2006) show that fuel subsidies are typically regressive; they and Bacon and Kojima (2006) discuss the politics of removing fuel subsidies more generally.

the resource curse, as has been suggested by Sala-i-Martin and Subramanian (2003) and Birdsall and Subramanian (2004).

Having a large natural resource sector has been found by some researchers to be associated with poor rates of growth (e.g. Sachs and Warner 1995, 1997, Sala-i-Martin and Subramanian 2003).²⁰ There are two dominant explanations for this poor growth, one economic in the traditional sense, and the other ‘institutional’. According to the first, resource wealth causes ‘Dutch disease’: exports of natural resources crowd out the production of other tradable goods, including manufactures, by raising the real exchange rate and making other tradables uncompetitive. If we assume that the manufacturing sector has a higher rate of growth than the resource sector, owing to learning-by-doing, positive spillovers, and so on, then this reduction in the manufacturing sector will imply a lower rate of aggregate growth (van Wijnbergen 1984, Sachs and Warner 1995, 1997). The RD does not bear on this part of the resource curse and I say no more about it here.

According to the institutional explanation for the resource curse, resource wealth often leads to countries having poorly-developed government institutions (Karl 1997). Governments may be rich, but they typically have weak control over the economy and society. The reason, it is argued, is that the ease of extracting revenues from the natural resource implies that governments do not need to do the hard work of creating bureaucracies, administrative capacity, and systems of conflict resolution that are required in order to collect taxes from the non-resource economy. On the basis of a detailed case study of Venezuela, with additional illustration from Algeria, Iran, Nigeria, and Indonesia, Karl (1997, p. 7) argues that “dependence on a particular export commodity shapes not only social classes and regime types ... but also the very institutions of the state, the framework for decision-making, and the decision calculus of policymakers.”²¹ This

²⁰ On the other hand, Wright and Czelusta (2004, 2007) argue that under the right circumstances natural resources can in fact be a driver of growth, citing the US, Australia and Chile as examples. Stijns (2005) finds that there is no statistical association between measures of *reserves* of mineral resources and slow growth in the 1970s and 1980s. None of these findings contradicts the Sachs and Warner finding that high levels of production or export of natural resources is, on average, bad for growth.

²¹ In particular, Karl argues that the problem arises when a country has a large natural resource sector during a period in which the state and its institutions are themselves developing. This occurred, she argues, in Venezuela, Algeria, Iran, and Nigeria, while Indonesia suffered less from the resource curse because “neither modern state building nor regime formation completely coincided with oil’s domination of the economy” (Karl, p. 208). She explains Norway’s success similarly.

follows the historical argument of Tilly (1975) that state formation in Europe was driven by the need to raise taxes, itself due to the need to fund their frequent wars.²² Resource-rich countries are thus likely to be extreme cases of the Swiss cheese state discussed above.

In addition to poor institutional capacity, the lack of taxation also helps to sustain non-democratic and rent-seeking governments. This argument is typically described as “No representation without taxation” – if governments do not tax their citizens, then the citizens do not demand democracy and government accountability (see Ross 2004a for discussion). These two elements combine in hindering economic development: without strong institutional capacity, governments are unable to provide the public goods required for development; without healthy accountability, they have little incentive to do so.

There also exists a slightly different take on the institutional element of the resource curse. Wright and Czelusta (2004, 2007) also view the resource curse as being a problem of institutions, but they state that “minerals themselves are not to blame for problems of rent-seeking and corruption. Instead, it is largely the manner in which policymakers and businesses *view* minerals that determines the outcome” (2004, p. 36, emphasis in original). A related view is expressed by Mehlum, Moene and Torvik (2006) and Boschini, Pettersson and Roine (2007), who argue that the effect of natural resources depends on existing institutions: natural resources in the context of “grabber-friendly,” i.e. rent-seeker-friendly, institutions lower growth, while natural resources in the context of “producer-friendly” institutions do not. For these authors, the problem is an interaction between pre-existing institutions and natural resources. This view is different from, but not inconsistent with, Karl’s (1997) argument that natural resource dependence is likely to make the institutions themselves worse. In support of Karl’s view, Sachs and Warner (1997, p. 23) find that “resource abundant countries have poorer scores on a variety of measures of institutional quality.” Hence while institutions appear to be an important determinant of the effect of natural resources, the quality of institutions itself may be influenced by the discovery of natural resources.

²² As Tilly (1990, p. 14) puts it, “state structure appeared chiefly as a by-product of rulers’ efforts to acquire the means of war”.

Thus three aspects of the institutional resource curse arise out of the literature: weak institutional capacity, weak accountability, and rent-seeking and corruption. By withdrawing resource revenues from the government and thereby requiring it to tax households and businesses in the economy, the RD could ameliorate the first two. The requirement to collect taxes would provide an incentive to develop institutional capacity, and the government would be forced to be more accountable to the population: citizens suffering from bad government are more likely than oil companies to withhold taxes. Above I described how a transparent and independent institution of the state could be less open to corruption than existing arrangements. The simple fact that income is not focused on any single recipient (e.g. the government) will at least reduce the scope for corruption. Gelb et al. (1988, p. 17) write that "a large rent component in national income, if not rapidly and widely dispersed across the population, is liable to divert scarce entrepreneurial talent away from commodity production into 'rent-seeking' activities." The RD is the most direct way to disperse rents rapidly and widely across the population.

Finally, resource abundance also appears to be associated with civil wars and other conflict, which in turn hinders development (see Ross, 2004b for a survey). Natural resources often fuel conflict by providing funding for civil wars. They also provide a strong incentive for violent coups: a coup leader faces the promise of great wealth as soon as he or she takes control of the government. The prospect of this wealth then makes it easier to fund a coup in the first place. Collier and Hoeffler (2004), for instance, find a strong, though non-linear, association between natural resource exports and civil war, peaking when primary commodity exports comprise a third of GDP.²³ Under the RD, taking over the government would not automatically provide a coup leader with revenues. He could of course confiscate the revenues, but a population used to receiving a resource income might offer more resistance than a population used to seeing revenues absorbed anonymously into government budgets.

²³ Collier and Hoeffler (2004, p. 567) explain the non-linearity of the relationship by suggesting that governments in countries with an extremely large natural resource sector, with exports above 33 percent of GDP, may be so well financed that rebellion is infeasible.

Targeted versus universal benefits

We have seen that substantial poverty reduction would be one of the advantages of the RD. But if poverty reduction is the primary goal, then the obvious alternative to a universal and equal payment is a benefit targeted at the poor. Here I briefly describe the main issues and the practical arguments in favour of universal schemes, purely from the point of view of poverty reduction.

With a given quantity of money to distribute, and holding all else equal, an accurately targeted scheme will obviously have a greater impact on poverty than a universal scheme. But all else is not equal. To start with, it is useful to define two types of error typically considered in evaluations of benefits: errors of *exclusion* are the failure to reach the intended beneficiaries of the transfer; errors of *inclusion* are unintended individuals receiving the benefit. There is an obvious trade off between the two types of error, as more rigorous testing will in general reduce errors of inclusion and increase errors of exclusion. At two extremes, errors of inclusion can be maximally avoided by giving no one the benefit, while errors of exclusion can be maximally avoided by giving everyone the benefit, i.e. through a universal scheme.

The first argument in favour of universal schemes, then, is that they minimize errors of exclusion. Cornia and Stewart (1993) survey benefit schemes in nine developing countries and find that targeted schemes such as food stamps do typically have significantly higher errors of exclusion than universal schemes such as general food subsidies. Lindert, Skoufias and Shapiro (2006) find that in 2002 in Latin America's four largest countries – Argentina, Brazil, Colombia and Mexico – social assistance programs reached less than half of the bottom 20 percent of the income distribution. Soares et al. (2007) analyze the two well-known and highly-regarded conditional cash transfer schemes in Brazil and Mexico, respectively *Bolsa Familia* and *Oportunidades*, using household surveys from 2004. They find that both are highly progressive with the poorest 20 percent receiving nearly 60 percent of the total benefits, but both suffer from large errors of exclusion: in Brazil only 41 percent, and in Mexico 30 percent, of poor households were reached by the relevant program. Ravallion (2007) analyses the impact of a targeted cash transfer scheme, called *Di Bao*, across 35 cities in China. He finds that “the cities of China that are better at targeting this program are generally not the ones where the scheme

came closest to attaining its objective” of poverty reduction. Perhaps more surprisingly, he finds that better targeting is not associated with cost effectiveness in reducing poverty.

The RD, in contrast, can be expected to reach a far higher proportion of the poor, along with the non-poor. Moreover, while the RD makes no attempt at targeting the poor, it is nonetheless more progressive than many other transfers in developing countries. Coady et al. (2004) find that in 21 of the 85 programs they analyze from developing countries around the world, the poor receive less than their population share of the benefit (e.g. the poorest 20% of people or households receive less than 20% of the total benefits). This is to be expected, for instance, of price subsidies for goods that are not consumed more by the poor than by the rich.²⁴ While a universal unconditional benefit like the RD is less progressive than a well-targeted conditional program, it is evidently better focused on poverty than these schemes.

Second, universal benefits have lower administrative costs than targeted or conditional benefits, for the simple reason that no bureaucracy is needed to establish whether any conditions (other than citizenship) have been met. However, in practice these costs may still be low. In Brazil’s conditional cash transfer program *Bolsa Familia*, for instance, administrative costs comprise only 2.6 percent of the total program budget. On the other hand, the trade off of low administrative costs is higher errors of inclusion, when the benefit is received by unintended people. In the case of *Bolsa Familia* about 20 percent of recipient families are not in the poorest quarter of the distribution (Lindert et al. 2007, p. 47).

Third, behavioural responses to benefits that are conditional on income levels imply high effective tax rates, leading to disincentives to increase incomes and thus creating a poverty trap. Unconditional benefits have an income effect, but no substitution effect on the opportunity cost of leisure, and therefore would be expected to have less of an impact on work incentives.

²⁴ Coady et al. (2004) describe such benefits as regressive, but they may in fact be progressive in the usual relative sense that the poor receive more *relative to their incomes* than the rich, even if in absolute terms they receive less per capita. However, some common subsidies are regressive even in the stronger relative sense: e.g. gasoline subsidies, often described as being implemented for the benefit of the poor, benefit the rich more than the poor even in relative terms because the rich spend a higher *share* of income on gasoline than do the poor (Coady et al., 2006).

Fourth, universal schemes typically enjoy more political support than targeted schemes and are therefore more likely both to be successful and to survive. As Titmuss (1968, p. 134, quoted in Jackson and Segal, 2003, p. 43) argued some decades ago in Britain, “services for poor people have always tended to be poor quality services.” Cornia and Stewart (1993, p. 473) find that “mostly, it seems that the switch [from general to targeted subsidies] also leads to reduced real value of the subsidy over time (as in Zambia, Sri Lanka). Less strong political support for the targeted schemes probably accounts for this.” In Sri Lanka, for instance, a universal food subsidy was replaced by targeted subsidies in 1979, against strong political resistance. Yet once the change had been made, the government encountered much less resistance in reducing the value of the targeted scheme. Similarly, Skocpol (1991, p. 263) argues that in the US “the most successful measures – Civil War pensions and social security – have been those that ensured entitlements to broad categories of people.” Gelbach and Pritchett (2002) formalize this argument with a model of the government budget where the executive can choose a universal or a targeted scheme, subject to majority voting. They find that in equilibrium the majority choose to assign so little of the budget to a targeted scheme than the poor are better off under a universal scheme.

Fifth, conditional transfers are more open to corruption: providing an official with the right to decide whether or not someone satisfies a set of conditions provides that official with leverage with which to extract payment from citizens. Similarly, discretion in awarding benefits increases the likelihood of clientelism, in which a benefit is given not for pecuniary gain but in return for political support.

The above does not imply that an unconditional universal benefit like the RD will indeed be the optimal benefit from the point of view of poverty reduction. But it does indicate that other types of benefits are not obviously more cost effective in terms of poverty reduction.

Economic effects on households

Above we saw that unconditional benefits produce less of a disincentive to work than conditional benefits, as they do not have a substitution effect on the opportunity cost of leisure. But the RD

would still have an income effect: if you are richer, consumer theory predicts that you may choose to spend more on leisure, which is to say you may choose to work less. Could this be a problem?

Three points should be made about this argument. First, any behavioural response to an increase in income signals an increase in welfare or well-being. If people choose to work less then it is because working less makes them better off. If one objects to people choosing to work less, one needs a good reason to discount their choice. Second, if people work less then it will have a purely *level* effect, potentially reducing GDP by some proportion, but not a *growth* effect: there is no reason to think that reduced labour supply will reduce the savings rate, investment, technology adoption, or any other determinant of growth. Third, consumer theory predicts that the labour supply effect will be largest for those with the lowest opportunity cost of leisure – that is to say, the least productive members of the workforce. The smaller the RD is relative to your wage, the less likely it is to reduce your desired work hours. Thus the effect on national product, while negative, will be lower than the effect on total hours of labour supplied.²⁵

While there may be a negative impact on labour supply there are reasons to think that, at least for the poor and the credit constrained, a rise in income may increase productivity. First, according to standard static efficiency wages arguments, workers who are undernourished are less productive. Second, the poor cannot make high risk, high reward investments for fear of falling below subsistence. Third, credit constraints can imply that even low risk, high reward investments such as schooling are impossible for the poor because they cannot afford not to send their children to work, rather than school. Such arguments are developed in the literature on the relationship between growth and inequality, but typically it is the level of income of the poor and the credit constraints they face, rather than inequality per se, that lead to the inefficiencies (see Ravallion, 2003 for discussion). The RD would clearly reduce these inefficiencies.

Empirically, there is only limited evidence. Skoufias and Maro (2006) find that Mexico's conditional cash transfer program *Progresa* (now called *Oportunidades*), for which poor families

²⁵ Lindert (2004) makes the argument that the effect of high unemployment on European GDP is very low because it is typically the least productive who are unemployed.

have to ensure their children attend school and make regular visits to a clinic, has had no significant impact on labour supply decisions. Standing (2008) surveys cash transfer schemes in developing countries and argues that “experience of cash transfer schemes has shown that far from breeding dependency and passivity, they foster independence and activity.” For instance, US government relief operation in Ethiopia in 2003 gave cash grants to households, and found that the grants

...presented a flexible assistance alternative that contributed to the rehabilitation of livelihoods. Cash grants also proved to be an important component in promoting linkages between relief and development, as a majority of beneficiaries invested a portion of their money in productive assets. In addition, the distribution of cash allowed individuals and communities to begin making a series of decisions, giving them the power to prioritize needs for their families and presenting them with a creative way to receive relief assistance with dignity.

(USAID 2004)

The finding that households invested the grants in productive assets accords with Collier and Gunning’s (1999) finding that the private sector tends to save a large share of windfalls that are due to price shocks. However, emergency relief and price shocks are both temporary windfalls that, according to standard consumption theory, one would expect to be saved. They give reason to be optimistic about the capacity of households to smooth volatile incomes, but they do not tell us what to expect as a response to a permanent increase in income, such as that due to the permanent component of the RD.

Unfortunately there is no clear evidence on the effect of a permanent and unconditional benefit on labour supply because very few such benefits exist (there appears to be no such research on the Alaska Permanent Fund Dividend). However, a study of the South African social security system, which provides old age pensions, child support, and other grants, addressed the above theoretical questions and found that:

- (1) Social grants provide potential labour market participants with the resources and economic security necessary to invest in high-risk/high-reward job search.
 - (2) Living in a household receiving social grants is correlated with a higher success rate in finding employment.
 - (3) Workers in households receiving social grants are better able to improve their productivity and as a result earn higher wage increases.
- (Samson et al., 2004, p. 4)

In conclusion, one cannot predict the effect of the RD on output with any confidence. Static consumer theory predicts a decline in labour supply, but efficiency wage arguments and household investment models predict a rise in productivity. There is some empirical support for the latter, but overall there is very little evidence.

5. Conclusion

The intuitive idea that the patrimony of a country belongs to all citizens has been around for a long time. In this paper I presented a specific version of this idea in which it is the *rents* due to natural resources to which all citizens have an equal claim, and in which this claim is satisfied by a universal, unconditional cash transfer which I called the *Resource Dividend*. The policy faces challenges in developing countries with low administrative capacity and little infrastructure, but I argued that these challenges would not be insuperable in any but the very weakest states. I also argued that the policy would be politically popular and would therefore have a reasonable chance of being adopted, particularly in democracies. While removing resource revenues from government budgets would not be in the interests of incumbent governments, opposition parties may decide that giving up direct control over resource revenues may be a price worth paying to achieve power.

The primary benefit of the Resource Dividend would be a dramatic reduction in poverty. I find that if all countries adopted it, global poverty at the World Bank's PPP\$1-a-day poverty line would be cut by half. In India and China, the countries with the most citizens and the most poor

people, poverty would be respectively halved, and eliminated. While the impact of the Resource Dividend would be dramatic, for most countries it would comprise a redistributive policy more modest, relative to GDP, than cash benefits currently paid in the European Union, which also play an important role in poverty reduction.

Unlike EU redistributive policies, however, the Resource Dividend depends on non-distortionary taxation. I suggested that it may help to reduce corruption by removing resource revenues from regular government budgets and by being a particularly easy policy to make transparent. Finally, I argued that it would also provide incentives to governments and individuals to reduce informality, and through this avenue may reduce the institutional aspects of the resource curse.

References

- Anand, Sudhir and Paul Segal (2008), "What Do We Know about Global Income Inequality?", *Journal of Economic Literature*, Vol. 46, No. 11, March 2008, pp. 57–94.
- Bacon, Robert and Masami Kojima (2006), *Coping with Higher Oil Prices*, World Bank Energy Sector Management Assistance Programme (ESMAP), Report 323/06 August 2006.
- Bannon, Ian and Paul Collier, eds., (2003), *Natural Resources and Violent Conflict: Options and Actions*, Washington, D.C.: World Bank
- Baunsgaard, Thomas and Michael Keen (2005), "Tax Revenue and (or?) Trade Liberalization", IMF Working Paper WP/05/112
- Birdsall, Nancy and Arvind Subramanian (2004), "Saving Iraq From Its Oil", *Foreign Affairs*, Vol. 83, Issue 4, pp. 77-89.
- Bolt, Katharine, Mampite Matete, and Michael Clemens (2002), "Manual for Calculating Adjusted Net Savings" Environment Department, World Bank, September 2002.
- Boschini, Anne D., Jan Pettersson and Jesper Roine, "Resource Curse or Not: A Question of Appropriability," *Scandinavian Journal of Economics*, Vol. 109, No. 3, pp. 593-617.
- Breceda, Karla, Jamele Rigolini and Jaime Saavedra (2008), "Latin America and the Social Contract: Patterns of Social Spending and Taxation", World Bank Policy Research Working Paper 4604
- Brittan, Samuel and Barry Riley (1978), "A People's Stake in North Sea Oil", *Lloyds Bank Review*, No. 128, April, pp. 1-18.
- (1980), *A People's Stake in North Sea Oil*, Unservile State Papers Number 26, London: The Liberal Party Publication Department.
- Cassing, James H. and Peter G. Warr (1985), "The Distributional Impact of a Resource Boom", *Journal of International Economics*, Vol. 18, pp. 310-319.
- Chen, Shaohua, and Martin Ravallion (2001): "How Did the World's Poorest Fare in the 1990s?" *Review of Income and Wealth*, Vol. 47, pp. 283-300.
- (2004): "How Have the World's Poorest Fared since the Early 1980s?", *World Bank Research Observer*, Vol. 19, No. 2, pp. 141-69.
- (2007): "Absolute Poverty Measures for the Developing World, 1981-2004", World Bank Policy Research Working Paper 4211, April 2007.
- (2008a): "China is Poorer than we Thought, But No Less Successful in the Fight against Poverty", World Bank Policy Research Working Paper 4621, May 2008.
- (2008b): "The Developing World is Poorer Than We Thought, But No Less Successful in the Fight against Poverty", World Bank Policy Research Working Paper 4703, August 2008.
- Coady, David, Margaret Grosh and J. Hoddinott (2004): *Targeting of Transfers in Developing Country: Review of Lessons and Experience*. Washington, D.C.: World Bank.
- Coady, David, Moataz El-Said, Robert Gillingham, Kangni Kpodar, Paulo Medas, and David Newhouse (2006): "The Magnitude and Distribution of Fuel Subsidies: Evidence from Bolivia, Ghana, Jordan, Mali, and Sri Lanka", IMF Working Paper WP/06/247.
- Collier, Paul and Jan Willem Gunning (1996), "Policy Towards Commodity Shocks in Developing Countries", IMF Working Paper 96/84.
- Collier, Paul and Jan Willem Gunning (1999), *Trade Shocks in Developing Countries. Volume 1: Africa*. Oxford: Oxford University Press.

- Collier, Paul and Jan Willem Gunning (2000), *Trade Shocks in Developing Countries. Volume 2: Asia and Latin America*. Oxford: Oxford University Press.
- Collier, Paul and Anke Hoeffler (2004), "Greed and Grievance in Civil War", *Oxford Economic Papers*, Vol. 56, No. 4, pp. 563-595.
- Collier, Paul (2007), *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It*, New York: Oxford University Press.
- Corden, W. Max and J. Peter Neary (1982), "Booming Sector and De-Industrialisation in a Small Open Economy", *The Economic Journal*, Vol. 92, pp. 825-848.
- Corden, W. Max (1984), "Booming Sector and Dutch Disease Economics: Survey and Consolidation", *Oxford Economic Papers*, Vol. 36, pp. 359-380.
- Cornia, Giovanni Andrea and France Stewart (1993), "Two Errors of Targeting", *Journal of International Development*, Vol. 5, No. 5, pp. 459-496.
- Datt, Gaurav (1998), "Computational Tools for Poverty Measurement and Analysis", International Food Policy Research Institute, Discussion Paper No. 50.
- Deaton, Angus, and Valerie Kozel, eds. (2005), *The Great Indian Poverty Debate*, New Delhi: MacMillan India.
- Durán, Iván Arias, Luis R. Baptista, Marlene Berrios, Victor Hugo Cárdenas C., Ramón Daza Rivero, José Miguel Gordillo, Luis Carlos Jemio M., Roberto Laserna, Mauricio Medinaceli, Carlos Hugo Molina, Fernando Molina M., Juan Antonio Morales, Carlos Navia R., Raúl Rivero Adriázola, Eduardo Rodríguez Veltzé, Juan Cristóbal Soruco Q. (2007), "Bolivia Somos Todos" [http://www.geocities.com/laserna_r/boliviasomostodos8.html]
- Dollar, David and Aart Kraay (2002), "Growth is Good for the Poor", *Journal of Economic Growth*, Vol. 7, Iss. 3. pp. 195-225.
- European Commission (2008), *European Social Statistics: Social Protection, Expenditure and Receipts, Data 1997-2005*, 2008 Edition, Luxembourg: Office for Official Publications of the European Communities.
- Gelbach, Jonah B. and Lant Pritchett (2002), "Is More for the Poor Less for the Poor? The Politics of Means-Tested Targeting," *Topics in Economic Analysis & Policy*: Vol. 2, Iss. 1, Article 6.
- Guio, Anne-Catherine (2005), "Income Poverty and Social Exclusion in the EU25", *Statistics in Focus, Population and Social Conditions 13/2005*, Eurostat.
- Jackson, Ben and Paul Segal (2003), *Why Inequality Matters*, London: Catalyst [<http://www.editiondesign.com/catalyst/pdf/inequality.pdf>].
- Karl, Terry Lynn (1997), *The Paradox of Plenty: Oil Booms and Petro-States*, Berkeley: University of California Press.
- Lindert, Kathy, Emmanuel Skoufias and Joseph Shapiro (2006). "Redistributing Income to the Poor and the Rich: Public Transfers in Latin America and the Caribbean", World Bank Institute Social Protection Discussion Paper No. 0605.
- Lindert, Peter (2004), *Growing Public: Social Spending and Economic Growth since the Eighteenth Century*, Cambridge: Cambridge University Press.
- Lindert, Kathy, Anja Linder, Jason Hobbs and Bénédicte de la Brière (2007): "The Nuts and Bolts of Brazil's Bolsa Família Program: Implementing Conditional Cash Transfers in a Decentralized Context", World Bank Social Protection Discussion Paper No. 0709.
- Mehlum, Halvor, Karl Moene and Ragnar Torvik (2006), "Institutions and the Resource Curse," *The Economic Journal*, Vol. 116 (January), pp. 1-20.

- Milanovic, Branko (2005): *Worlds Apart: Measuring International and Global Inequality*. Princeton: Princeton University Press.
- Mommer, Bernard (2002), *Global Oil and the Nation State*, Oxford: Oxford University Press for the Oxford Institute for Energy Studies.
- Paine, Thomas (2007 [1797]), *Agrarian Justice*, printed London: J. Adlard, text downloaded from [<http://www.thomaspaine.org/Archives/agjst.html>].
- Pogge, Thomas (2001), “Eradicating Systemic Poverty: Brief for a Global Resources Dividend”, *Journal of Human Development*, Vol. 2, No. 1, pp. 59 – 77.
- Ratha, Dilip, Sanket Mohapatra, K. M. Vijayalakshmi and Zhimei Xu (2007), “Remittance Trends 2007”, *Migration and Development Brief 3*, Development Prospects Group, Migration and Remittances Team, World Bank.
- Ravallion, Martin (2003), “Targeted Transfers in Poor Countries: Revisiting the Trade-offs and Policy Options”, World Bank Policy Research Working Paper 3048.
- (2005), “Inequality is Bad for the Poor”, World Bank Policy Research Working Paper 3677.
- (2007), “How Relevant is Targeting to the Success of an Antipoverty Program?” World Bank Policy Research Working Paper 4385.
- Ross, Michael L. (2004a), “Does Taxation Lead to Representation?”, *British Journal of Political Science*, Vol. 34, pp. 229–249.
- Ross, Michael L. (2004b), “What Do We Know About Natural Resources and Civil War?”, *Journal of Peace Research*, Vol. 41, No. 3, pp. 337-356.
- Sachs, Jeffrey D. and Andrew M. Warner (1995), “Natural Resource Abundance and Economic Growth”, NBER Working Paper 5398.
- (1997), “Natural Resource Abundance and Economic Growth”, mimeo, Center for International Development and Harvard Institute for International Development.
- Sala-i-Martin, Xavier and Arvind Subramanian (2003), “Addressing the Natural Resource Curse: An Illustration From Nigeria”, National Bureau of Economic Research, Working Paper 9804.
- Samson, Michael, Una Lee, Asanda Ndlebe, Kenneth Mac Quene, Ingrid van Niekerk, Viral Gandhi, Tomoko Harigaya and Celeste Abrahams (2004), *The Social and Economic Impact of South Africa’s Social Security System*, Report Commissioned by the South African Economics and Finance Directorate, Dept. of Social Development, 30 September 2004.
- Skocpol, Theda (1991), “Targeting within Universalism: Politically Viable Policies to Combat Poverty in the United States,” in *The Urban Underclass*, ed. C. Jencks and P.E. Peterson, Washington: The Brookings Institution, pp. 411-436.
- Skoufias, Emmanuel and Vincenzo di Maro (2006), Conditional Cash Transfers, Adult Work Incentives, and Poverty”, World Bank Policy Research Working Paper 3973.
- Soares, Fábio Veras, Rafael Perez Ribas and Rafael Guerreiro Osório (2007): *Evaluating the Impact of Brazil’s Bolsa Família: Cash Transfer Programmes in Comparative Perspective*, IPC Evaluation Note No. 1, International Poverty Centre, United Nations Development Programme.
- Standing, Guy (2008), “How Cash Transfers Promote the Case for Basic Income”, *Basic Income Studies*, Vol. 3, Iss. 1.
- Stijns, Jean-Philippe C. (2005), “Natural Resource Abundance and Economic Growth Revisited”, *Resources Policy*, Vol. 30, No.2, pp. 107-30.
- Sundaram, K. and Suresh D. Tendulkar (2008), “Poverty Decline in India in the 1990s : A Reality And Not An Artefact” in Anand, Segal and Stiglitz (eds.), *Debates in the Measurement of Global Poverty*, Oxford University Press.

- Suplicy, Eduardo Matarazzo (2007), "Basic Income and Employment in Brazil", *Basic Income Studies*, Vol. 2, No. 1, Article 10.
- Tilly, Charles, ed. (1975), *The Formation of National States in Western Europe*, Princeton: Princeton University Press.
- (1990), *Coercion, Capital, and European States, AD 990-1990*. Cambridge, Mass., and Oxford: Basil Blackwell
- Titmuss, Richard M., (1968): *Commitment to Welfare*, London, Allen & Unwin.
- United Nations Development Programme (UNDP) (2007), *Informe Nacional sobre Desarrollo Humano 2007: El estado del Estado en Bolivia*, La Paz: United Nations Development Programme.
- US Agency for International Development (USAID) (2004): "USAID/OFDA Uses Cash Grants to Alleviate Chronic Food Insecurity in Ethiopia", USAID, Washington, DC.
http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/publications/focus_articles/6_2004_Ethiopia.html
- United States Basic Income Guarantee (2008), USBIG Newsletter Vol. 9, No. 48 Spring 2008.
- van der Ploeg Frederick and Anthony J. Venables (2008), "Harnessing Windfall Revenues in Developing Economies: Sovereign Wealth Funds and Optimal Tradeoffs Between Citizen Dividends, Public Infrastructure and Debt Reduction", CEPR Discussion Paper 6954.
- van Wijnbergen, Sweder (1984), "The 'Dutch Disease': A Disease After All?", *The Economic Journal*, Vol. 94, pp. 41-55.
- Wenar, Leif (2007), "Property Rights and the Resource Curse", *Philosophy and Public Affairs*, Vol. 36 Iss. 1, pp. 2-32.
- Winer, Jonathan M. and Triffin J. Roule (2003), "Follow the Money: The Finance of Illicit Resource Extraction", ed. Collier and Bannon (2003), pp. 161-214.
- Requena, Juan Carlos, Gustavo Canavire, John Newman, Carlos Mollinedo, Wilson Jiménez and Fernando Landa (2004), "Impact of Hydrocarbon Price Increases: A Vision From the Perspective of MECOVI Surveys", Document prepared by the World Bank with contributions from UDAPE.
- World Bank (2008a), "Food Price Surge Could Mean '7 Lost Years' in Poverty Fight, Zoellick Says", 11 April, <http://go.worldbank.org/U8PAI82X20>.
- World Bank (2008b), "Food Price Crisis Imperils 100 Million in Poor Countries, Zoellick Says", 14 April, <http://go.worldbank.org/5W9U9WTJB0>.
- Wright, Gavin and Jesse Czelusta (2004), "The Myth of the Resource Curse", *Challenge* (March-April 2004), pp. 6-36.
- (2007), "Resource-Based Growth Past and Present", in *Resources: Neither Curse nor Destiny*, Daniel Lederman and William F. Maloney (eds.), Washington, D.C.: Stanford University Press and the World Bank, pp. 183-211.

Table 1: Global poverty estimates

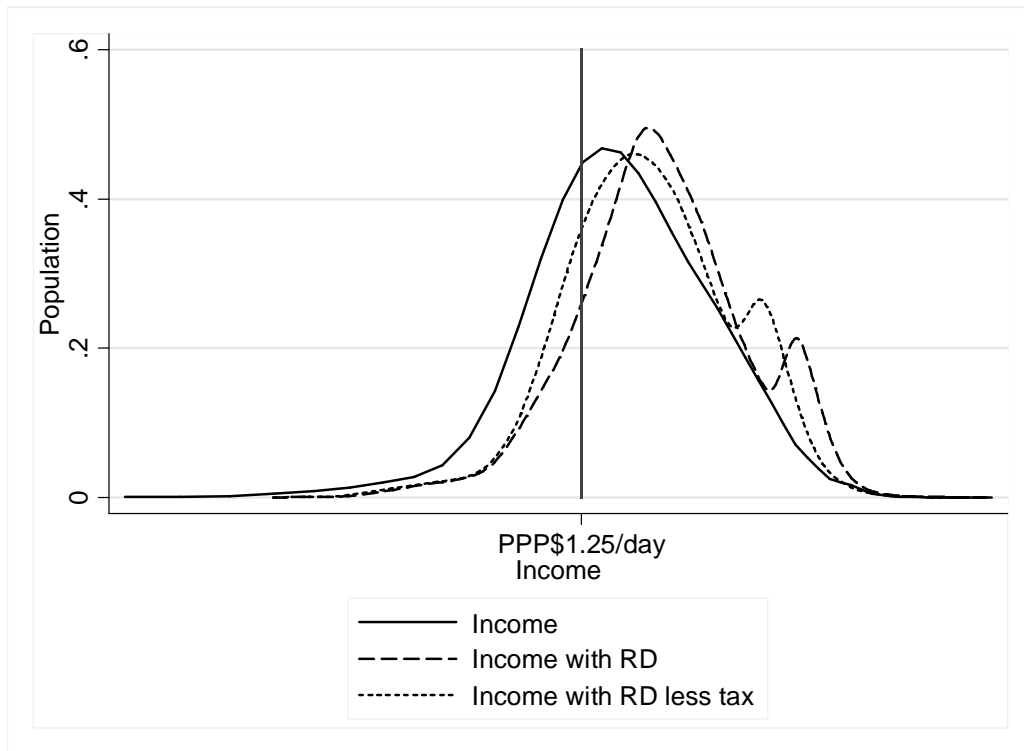
Poverty at PPP\$1.25	World Bank estimates	Current poverty	Own estimates	
			RD, no taxes	RD, with taxes
Population in poverty (millions)	1,377	1,327	600	741
Share in poverty	25.2%	25.6%	11.6%	14.3%
% poverty reduction	-	-	54.8%	44.1%

Table 2: Poverty estimates, selected countries

Country	Rents share of GDP, 2002-06	Resource Dividend (monthly), 2005 prices		Poverty headcount PPP\$1.25 a day (PPP\$38 a month), millions (%)		
		PPP\$	US\$	Current	RD, no taxes	RD, with taxes
Bangladesh	3.2	PPP\$2.7	US\$1.1	70.4 (49.6%)	61.5 (43.4%)	65.7 (46.3%)
Brazil	4.6	PPP\$28.1	US\$18.1	14.5 (7.8%)	0 (0.0%)	0 (0.0%)
China	5.2	rural: PPP\$20.5 ^a urban: PPP\$15 ^a	US\$7.5	211.9 (16.2%)	10.7 (0.8%)	18.9 (1.4%)
India	4.2	rural: PPP\$10 ^a urban: PPP\$6.6 ^a	US\$2.6	455.4 (41.6%)	223.0 (20.4%)	266.6 (24.4%)
Indonesia	11.4	rural: PPP\$34.5 ^a urban: PPP\$24.5 ^a	US\$12.4	47.3 (21.5%)	0.1 (0.0%)	0.9 (0.4%)
Nigeria	50.9	PPP\$49.4	US\$29.1	91.1 (64.4%)	0 (0.0%)	68.6 (48.5%)
Pakistan	4.8	PPP\$8.1	US\$2.9	35.2 (22.6%)	13.7 (8.8%)	18.2 (11.7%)

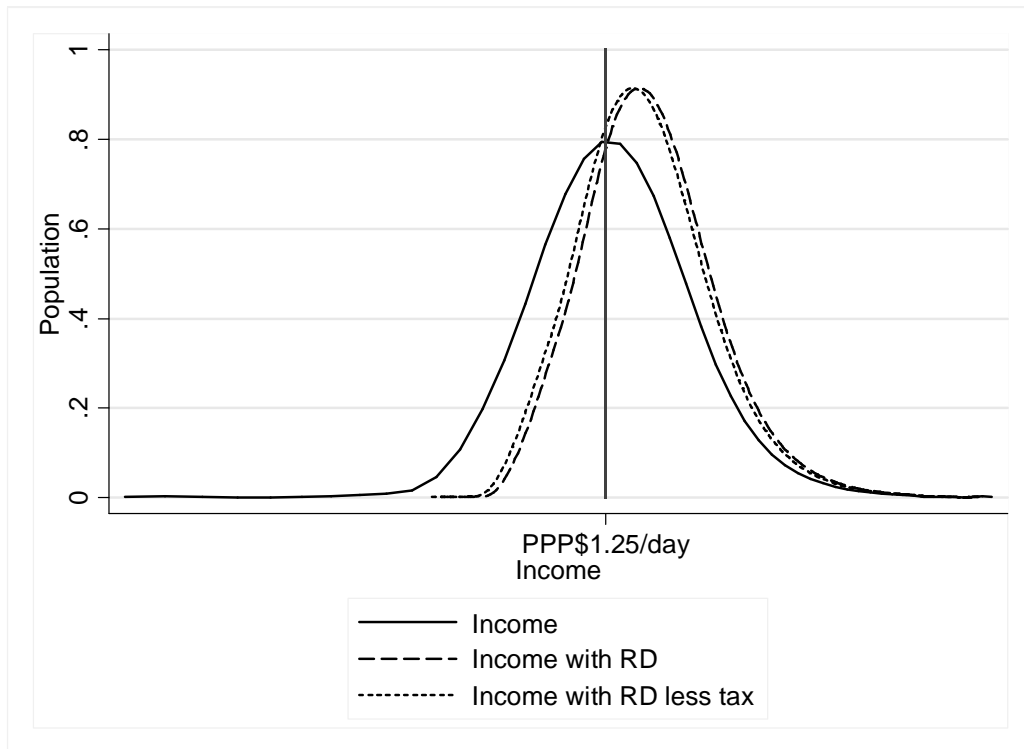
^aRural and urban PPP\$ values for the RD differ because of price differences. Prices are generally lower in rural areas, so the real value of a given cash RD is higher.

Figure 1: Log income distributions for all developing countries



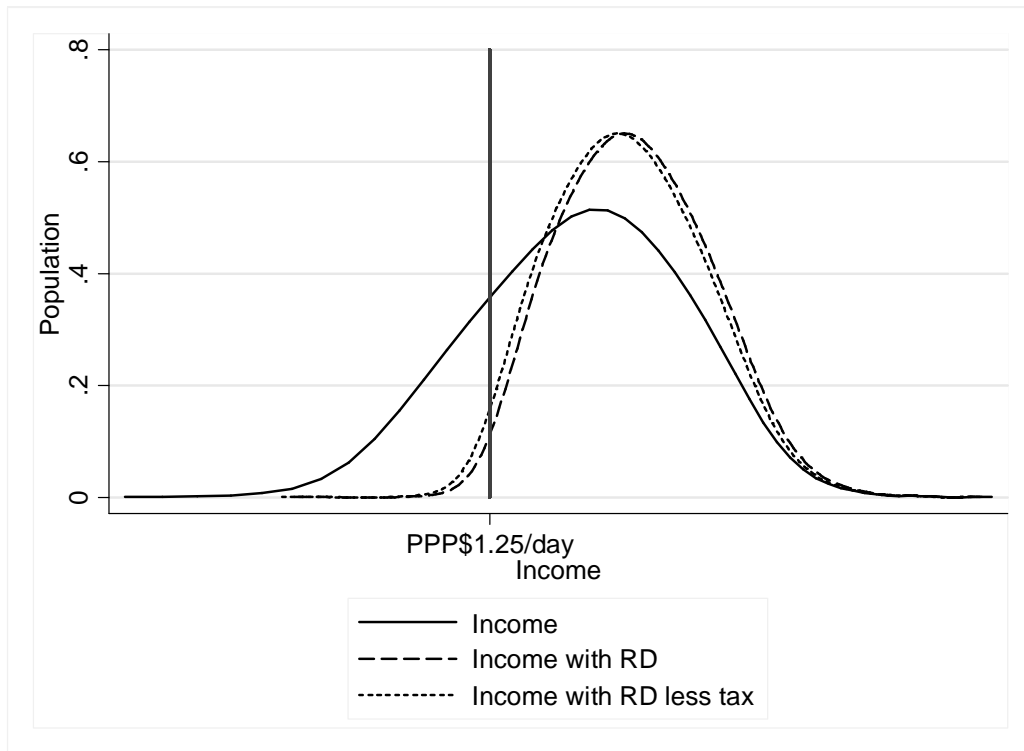
Note: Kernel density estimation using Epanechnikov kernel.

Figure 2: India log income distributions



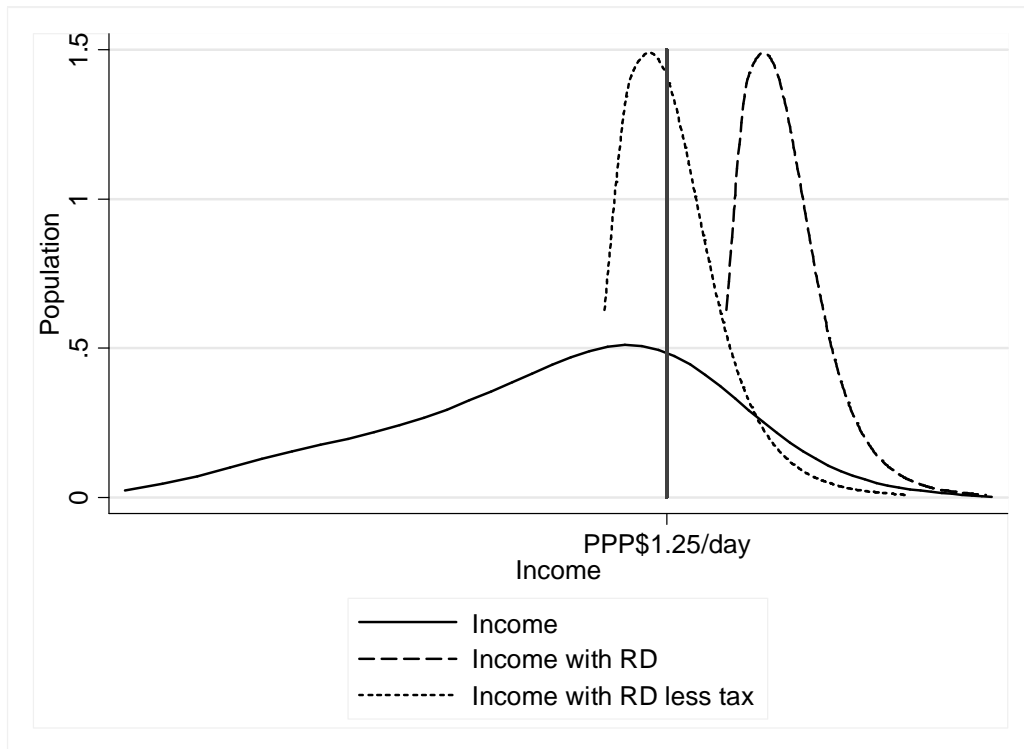
Note: Kernel density estimation using Epanechnikov kernel.

Figure 3: China log income distributions



Note: Kernel density estimation using Epanechnikov kernel.

Figure 4: Nigeria log income distributions



Note: Kernel density estimation using Epanechnikov kernel.