Aid Effectiveness: Human Rights as a Conditionality Measure.*

Mustapha Douch†, Huw Edwards‡, Todd Landman§, Sushanta Mallick¶

December 13, 2018

Abstract

The 'conditionality hypothesis' proposed by Burnside and Dollar (2000) suggests that aid is only effective in augmenting growth in the presence of a sound policy environment. This hypothesis was so influential that its policy recommendation, to provide aid conditional upon recipient domestic policies, is currently the dominant ODA allocation criterion. However non-economic dimensions of development (political and institutional) are increasingly seen as fundamental. For this reason, this paper focuses on the relationship between repression and corruption, and argues that the measurement and monitoring of human rights provision in particular, is a useful tool in gauging the likely effectiveness of aid, based on the finding that countries with better human rights performance experience positive growth, reflecting stronger governance.

KEYWORDS: Human rights, aid effectiveness, corruption, oligarchy

JEL Classification: F35, P16, P40,O19

*The authors wish to thank Marc Hansen for initial data work, and participants at seminars in Loughborough University, Queen Mary University of London and Nottingham University in Ningbo, China, and at the AMEF conference in Thessaloniki, Greece. We particularly thank Giovanni Facchini for extensive comments. Any errors are our own.

†Aston University, Lloyds Banking Centre, ABS, UK, UK; Email: m.douch@lboro.ac.uk

‡School of Business and Economics, Loughborough University, UK; Email: t.h.edwards@lboro.ac.uk

§Faculty of Social Sciences, University of Nottingham, UK; Email: Todd.Landman@nottingham.ac.uk

¶School of Business and Management, Queen Mary University London, Mile End Road, London E1 4NS, UK; Email: s.k.mallick@qmul.ac.uk

1 Introduction

Aid to developing countries is an important part of OECD budgets, with a total of $142.6 billion allocated in 2016 - a rise of 7.1 per cent compared to 2015, after stripping out inflation and refugee costs.[1] Six countries (Germany, Denmark, Luxembourg, Norway, Sweden and the UK) met the UN target of spending 0.7 percent of Gross National Income, although a further 22 countries did not. However, the decline in the share of aid going to the poorest countries reflects, perhaps, a climate of skepticism in parts of the Western media over the effectiveness of aid: even publications such as The Economist, which has made many supportive comments about aid[2] have been emphasizing that while aid 'set South Korea and Taiwan on the road to riches, helped eliminate smallpox in the 1970s and has almost eliminated polio', it was likely to be 'snaffled by crooks' (the Economist cites Malawi as a prime example) and prop up dictators.[3]. Indeed, research has yet to produce a consensus regarding whether or not aid provides any favorable effects at all. The view closest to the status of general consensus is currently the 'conditionality hypothesis', as first introduced by Dollar and Pritchett (1998) and Burnside and Dollar (2000): in general, where the policy environment meets certain conditions, aid has generally been seen as effective in producing economic growth.

To the extent that donors come to accept aid conditionality, the issue of choice of decision/assessment variables is central. The original Burnside and Dollar (2000) article used a policy variable composed of three policy dimensions: the government's budget surplus for fiscal policy, the inflation rate for monetary policy and the Sachs Warner index for openness or trade policy. Needless to say, the choice of policy variables may have a profound impact on the conclusions and, thereby a major impact on the world's poor. Our research in this paper accepts (with some reservations[4]) that the original conditionality variables are positively related to growth. However, we also argue that there is a strong case for use of more political and economic indicators of governance as well. In particular, we argue that corruption and repression are intrinsically connected, and that the development of a range of institutional quality indices is potentially an important contributor towards developing better conditionality and targeting of aid. In this paper, we make extensive and novel use of international comparative indices of human rights (HR) provision, which are now available for almost all countries since 1980. Some simple econometric work shows that better HR provision is, indeed, closely linked to less corruption, but the data for the latter (from Transparency International) is still more partial in its coverage - and hence there is a strong case for focusing at present on the former.

To assess whether HR is, indeed, a good variable for assessing potential aid effectiveness, we follow Burnside and Dollar (2000), whose main analytical premise was to establish whether aid influenced GDP growth.[5]

[1] http://www.oecd.org/dac/development-aid-rises-again-in-2016-but-flows-to-poorest-countries-dip.htm

[2] The Economist (2011, April 7). Retrieved August 12, 2011, from The Economist.com: http://www.economist.com/node/18530173

[3] The Economist (11 June 2016)

[4] For example, the binary nature of the Sachs Warner index for openness is an inadequate simplification of the far more intricate trade system. Consequently this paper proposes the implementation of Dreher's KOF index of Globalization

[5] This is, of course, a relatively limited concept of development, but nevertheless one worthy of examination.Sen (2001), for example, proposed the 'Development As Freedom' hypothesis which suggests that various freedoms, such as civil liberties, are not only constituent parts of the concept of development, and as such possess intrinsic value, but form central forces in the promotion of development including

Our empirical analysis shows that, although there may be exceptions, there is a positive influence of both human rights and of the policy environment on the impact of aid upon GDP per capita.

Due to the results of the empirical analysis underlying this paper, a modified 'new conditionality' (Mosley et al., 2004) will be proposed which suggests that aid efficiency can be improved not only by targeting recipient countries with a sound policy environment but also by targeting purpose specific schemes - specifically those related to the establishment of a sound policy environment and the promotion of human rights.

The structure of the rest of our paper is as follows: Section 2 provides a more extensive review of the state of the current literature, starting with the Dollar and Pritchett (1998) and Burnside and Dollar (2000), but adding some literature and data analysis on the role of politico-economic variables, in particular upon the relationship with corruption perception and HR provision indicators. In Section 3, we develop an illustrative theoretical model of corruption and repression, and show that unconditional aid can weaken the bargaining position of workers vis-a-vis the ruling oligarchy, undermining the contribution of aid to growth. The model should be seen as schematic only, but provides some support to the empirical work in the following sections. Section 4 introduces our database: a multi-country panel of the UN-defined Least Developed Countries over the period from 1990 to 2012. In particular, we make use of an updated version of the Landman and Larizza HR index (Landman and Larizza, 2009). Critically, in Section 5, when we carry out our main econometric analysis of the conditionality hypothesis in Table **??**, we find a consistently significant and stable positive coefficient for the interaction effect of HR provision and net ODA receipts, indicating that the impact of ODA receipts upon economic growth is consistently positive where HR performance is better, ever after considering several robustness checks. In Section 6 we specifically introduce policy variables following Burnside and Dollar (2000), and show that the aid-human rights interaction term is still positive and highly significant, even after having considered the role of macroeconomic policy variables. Section 7 concludes.

2 Background and Literature

2.1 The importance of aid conditionality

The aid effectiveness literature is grounded in models of growth and development. Such models are typically of two types. First, there are conditional convergence models, Mankiw et al. (1992), in which per capita GDP converges on relative levels. A potential criticism, (Carlin et al., 2005), is that this model is often taken as implying that poorer countries should have higher growth rates. As an alternative, in the endogenous growth literature (Romer, 1986), countries converge on different relative growth rates. Burnside and Dollar (2000) base their analysis upon the Barro (1990) model which is a modified version of the latter endogenous growth model that allows for the presence of government activity - i.e. $y = AK^{\alpha}G^{1-\alpha}$, where G is government

effective development. An advancement in education for example, is a non-income factor that has been shown to have considerable mid-to-long term effects on economic growth (Becker et al. (1994); Barro (2001)).

expenditure. That is, the Barro (1990) model allows aid to subsidize government expenditure and to alter the budget constraint accordingly and improve consumption and utility.[6]

Burnside and Dollar (2000) (henceforth 'BD2000') argue that the convergence result has been difficult to identify due to the persistence of subsistence consumption and subsequent low average propensity to save. This low propensity to save is the theoretical foundation for the role of aid, justified through the Barro (1990) government consumption mechanism. The presence of policy and institutional distortions in such a growth model would naturally reduce the productivity of capital, which in turn diminishes growth and hampers aid's effect on growth. Consequently, BD2000 base their growth model on this theory of economic growth whilst the main innovation consisted of the introduction of an aid-policy interaction term $(a_{it}p_{it}^{'})$ to account for the above mentioned distortions. For their empirical analysis, BD2000 used a panel of 56 countries and six time periods of each four year averages from 1970-1973 until 1990-1993. Their specified model contained two equations in order to analyze both the effect of aid on growth and to model the allocation of aid. This was an attempt to account for the endogeneity of aid, the allocation of which was thought to be highly correlated with growth itself. The primary finding of the BD2000 paper was that the coefficient on the aid-policy interaction term was positive and statistically significant across a number of alternative specifications whereas the coefficient of aid was not. This led to the policy recommendation that the efficiency of aid would be enhanced, if donor resources were allocated to countries with a sound policy environment: i.e. the conditionality hypothesis.

The BD2000 paper was criticized, e.g. by Dalgaard and Hansen (2001), Dehn and Collier (2001) and Easterly et al. (2004), who all suggested that the conditionality conclusion was highly sensitive to sample choice. Easterly et al. (2004) tested the robustness by expanding the BD2000 dataset from 275 observations across 56 countries to 356 observations in 62 countries.[7] [Note that, in this paper, we take an alternative approach of focusing on LDCs only, as specifically defined by the UN].

Dehn and Collier (2001) introduced export price variables and found that they were highly significant suggesting the BD2000 model specification suffered from omitted variables bias, putting into question the reliability of their results. However unlike Easterly et al. (2004), Dehn and Collier (2001) found that aid was still significant but that its effectiveness could be increased more by targeting countries suffering from shocks than by targeting those with sound policy environments. Additionally Dehn and Collier (2001) proposed that accounting for shocks made the BD regression robust to sample selection.

Although BD2000 implemented a 2SLS estimation technique to account for possible endogeneity of aid, they assumed that aid was unable to affect policy. Mosley et al. (2004) found this assumption questionable and produced a model that analyzed the effect of aid on both poverty reduction and on the policy environment of the aid recipient, finding that policy areas such as corruption, inequality and the composition of public expenditure

[6]The BD model is non-convergent in GDP levels because the power terms on the two production factors, K and G, sum to unity. For a lower sum of parameters, there will be eventual convergence in relative levels, even if the effects of a positive shock are magnified relative to the simple Solow model

[7]A response to Easterly et al. (2004) by Burnside and Dollar (2004) argued that Easterly et al. (2004)'s results reflected the country specific characteristics and trends of eight added countries in the observed time periods.

in particular have a high influence on pro-poor growth. In addition, Mosley et al. (2004) proposed a 'new conditionality', under which donors have improved flexibility in the punishment and rewarding of recipient country policy achievements (Mosley et al., 2004). This recommendation entails the targeting and development of government expenditure in particular, since supervision would arguably be relatively easy.

Hansen and Tarp (2001), criticized the BD2000 methodology for not correctly dealing with country specific fixed effects. Hansen and Tarp (2001) argued that the inclusion of initial real GDP per capita in the BD2000 regression causes correlation between the regressor and the error term; naturally this leads to inconsistent estimators. Consequently Hansen and Tarp (2001) differenced the data, implementing the within difference fixed effects model, removing country specific effects, which allowed for consistent estimation through the generalized method of moments (GMM) estimator. Through this methodology they found that aid had a significant positive impact regardless of policy environment; however that decreasing returns exist supporting the necessity to adjust for possible non-linearities in the aid-growth relationship.

2.2 Aid effectiveness in practice

We start by plotting, in Figure 1, below, the simple bivariate correlations for our sample of LDCs between i) the growth rate of GDP per capita and Official Development Assistance (ODA) received per capita, ii) ODA and HR provision (higher is better) and iii) growth in GDP per capita and HR provision.

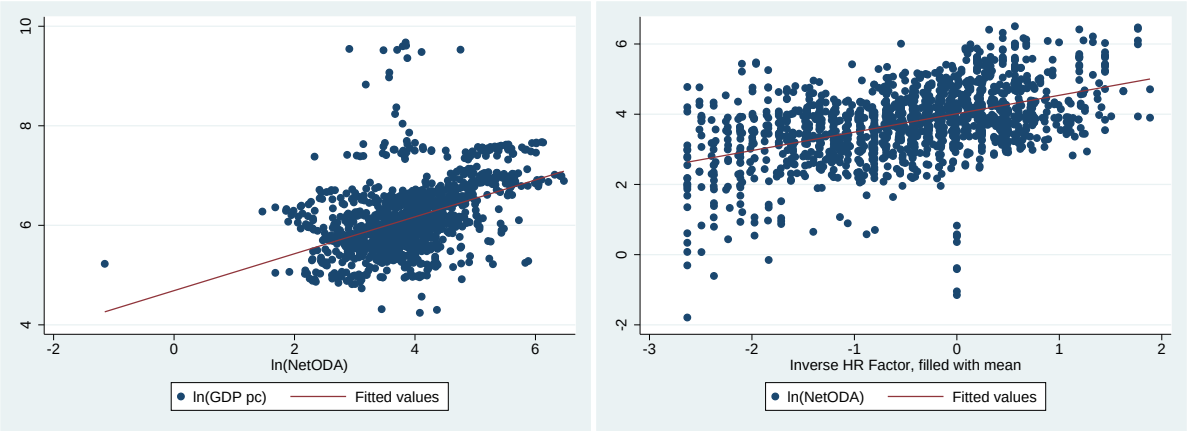
These scatter plots are a preliminary indication of the results that can be expected from the regression analysis and informally suggest that there exists a clear relationship between ODA per capita and per capita GDP growth, as well as between these variables and the provision of HR.

Broadly, there are three schools of thought on the role of aid: first, those suggesting aid is ineffective (Mosley (1987); Boone (1996); Easterly et al. (2004); Rajan and Subramanian (2008) or Doucouliagos and Paldam (2009) , Doucouliagos and Paldam (2010)), second those that support a strong causal relationship between aid and growth (Hansen and Tarp (2000); Hansen and Tarp (2001) or Dalgaard et al. (2004)) and, third, those that promote a conditioned causal relationship of various shapes and forms (Dollar and Pritchett (1998); Burnside and Dollar (2000) ; to a certain extent Dehn and Collier (2001)).

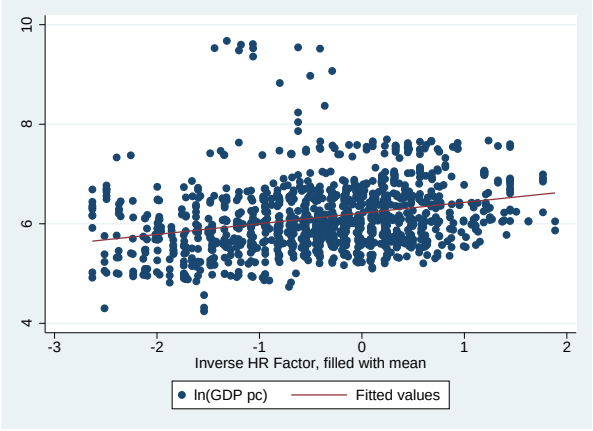
2.3 Human rights as a facilitator of development: relationship to corruption

While many studies have viewed improved human rights as a potential benefit of development[8], our study lies more strongly in the tradition of Sen (2001), who argues strongly that development is a process of eradication of numerous 'unfreedoms', such as *inter alia*, tyranny, social deprivation, oppression and poor socio-economic opportunities[9] . Sen (2001) argues that beyond their intrinsic humanitarian value the provision of personal integrity rights and civil liberties themselves constitute individual and political incentives for economic security;

[8] Blume and Voigt (2007) provide a good discussion of this literature.
[9] Our approach is also in line with Collier (2008)'s view on 'traps' which impeded development



(a) (b)



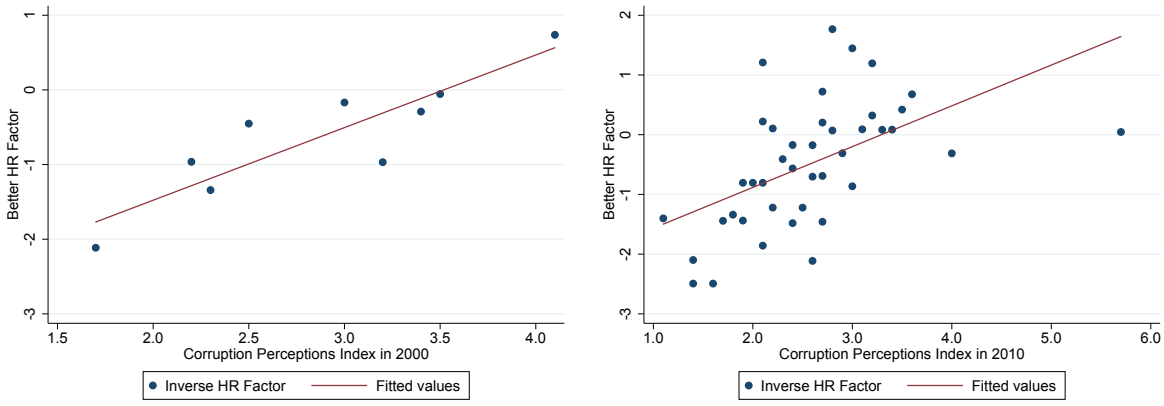
(c)

Figure 1: Simple correlation between GDP per capita and official development assistance (ODA), and the relation of these to the human rights factor (higher value meaning better HR).

Or rather that a violent and oppressive regime is unlikely to foster an innovative and competitive economic environment. Against this view, there is a critique that human rights constitute an imposition of 'Western values' (Cerna, 1994), although that author, like Sen (2001) tends to dismiss this argument.

One strong argument for the potential role of personal integrity and other human rights measures in fostering development is simply to observe the relationship with a known impediment to development: namely corruption. Figures 2 plot our human rights indicator against Transparency International's corruption perception index for two years.

The correlation in Figure 2 (a) is based on the very small number of LDCs for which corruption perception data are available in 2000. It can be seen that there is a clear positive correlation with our (inverse) HR factor: in other words, countries with less corruption tend to have better HR provision. Figure 2 (b) reports a similar simple correlation for 2010 for which more data are available and for which we see a positive but not perfect correlation.



(a) (b)

Figure 2: Correlation between corruption perception index and human rights factor

These figures represent a simple correlation between Corruption Perception Index (CPI) and human right factor. Notice that high value of HR factor means better human rights, while high value of CPI means low corruption.

Using a pooled cross-section time-series data set with 186 countries between 1980 and 2004, Landman and Schudel (2007) show that more corrupt countries have worse records at protecting human rights, even after controlling for other explanatory variables, such as the level of democracy, national income, population size, government consumption, and regional controls. It is thus fair to say that some LDCs tend clearly to a 'corrupt and repress' model, while others tend to be better on both counts. While both forms of data rely on perceptions and judgments about the level of corruption and human rights situation in any given country-year, the data for human rights are more complete and based on published source data drawn from the annual reports of Amnesty International and the US State Department. The greater coverage and reliability of the human rights data lead us to focus on human rights as our main indicator for analyzing how domestic governance interacts with foreign aid.

3 A theoretical model of the relationship between human rights and aid effectiveness

We model the effects of aid in the context of a political economy model of economic growth. As such, we need to choose whether to use a convergent growth model (following Solow (1956) and Mankiw et al. (1992)) or an endogenous growth framework (Romer, 1986). In reality, however, the choice is not so stark: unlike the original Solow model, it is quite possible to incorporate increasing returns to scale in a convergent growth model, where they are not increasing so fast as to prevent eventual convergence. At the same time, convergence may actually be quite slow, so that a change in conditions can produce raised, or lowered growth for many years.

In this section, we set out such a conditional, but extended convergence model. The model is primarily illustrative, and is simplified a good deal in order to obtain tractable closed form solutions. Nevertheless, the

main principles carry across to a range of models. The key feature is that, while private sector decisions (labor and capital investment) lead the economy to converge on a steady-state exogenous growth path, as in Solow (1956), provision of a public good (in Romer (1986)'s case, education) can lead to further growth. This has to be funded, of course, usually through taxation on capital and labor income, but if the balance of public good provision and taxation is sensible, investment in the public good will lead, over time, to a rise in private sector investment, in turn producing more tax revenues which can be reinvested in a virtuous circle. In the extreme case (as discussed by Romer (1986), the virtuous circle is unending, and classed as 'endogenous growth' since there is no convergence in levels: in a more plausible case there is eventually convergence on a new equilibrium, but with multiplier effects from the feedback process. Our analysis in subsequent sections supports conditionally convergent growth, with a long-run multiplier effect. For this reason, unlike BD2000 and others, we choose a model with convergent properties.

Critically, however, our modeling follows BD2000 in assuming that LDCs have a poverty trap, inhibiting (in this case public) investment, and hence providing a primary motivation for aid provision. Within this framework, we consider human rights to be one of a number of underlying institutional factors which determine the responses of growth to a boost in public goods provision. In particular, we start from Acemoglu et al. (2001)'s view that bad institutions, which have usually been inherited from centuries of history, are the primary cause of low economic growth. Repression (in the form of lack of human rights, political freedoms and the rule of law) can be seen in this light as shifting the bargaining balance between the main populace of a country (stereotyped in our model as 'workers') and an exploitative elite ('oligarchs'), by weakening the bargaining power of the former, leading to bad institutions. These latter not only lead to poor distribution of existing resources, but also to poor distribution at the margin, so that a country where the elite exploit existing tax and other resources and divert them for their own purposes is likely to see foreign aid resources exploited in a similar way.

To show this, we concentrate on an economy employing three factors: labor, L, private capital, K, which is assumed to be internationally mobile, with a return set to r, and a depreciation rate of δ, and a public good, G, in order to produce output. The model of the economy is to be seen as primarily illustrative. The labor force is assumed to be constant in size, in order to simplify the model (this can be altered without a great deal of difficulty). Likewise, we assume that the level of technology is constant: again, this can easily be replaced by a constant exogenous growth rate, but it would simply complicate the main results. Growth, in response to a shock (such as an increase in international aid) is therefore a medium-term phenomenon, as the economy moves from one steady-state level towards another.

We choose parameters again in order to make the model tractable and illustrative. Hence, we assume that output,

$$Y_t = BL_t^{\frac{1}{2}} K_t^{\frac{1}{2}} G_t^a e^{gt}. \tag{1}$$

We set productivity parameter $B = 1$ without loss of generality, and also set $L = 1$.

Note that, in our model, the Cobb-Douglas share parameters for labor and capital sum to unity, so that the total national product is exhausted, with labor and capital each receiving $\frac{1}{2}$ of GDP, before tax. The public good is funded from a tax at rate T on profits. Looking at the parameters on the two reproduced factors, K and G, they sum to $a + \frac{1}{2}$: as long as $a < \frac{1}{2}$, this is not large enough to yield endogenous growth, but rather convergent growth with a multiplier relative to the exogenous rate of technical progress, g, of $\frac{3}{1-2a}$ (so, for example, the multiplier on growth, with $a = 0.1$, would be 3.75). When $a = \frac{1}{2}$, we have a variant of the Barro (1990) endogenous growth model.this model is essentially similar to the model in Carter and Temple (2017) where neoclassical growth is amplified, except that the driver of amplified growth in our model is through taxation and investment in the public good, G.

Since the model is purely illustrative, we want to make it as simple as possible, and hence we choose to set $g = 0$. Hence our starting model is

$$Y_t = K_t^{\frac{1}{2}} G_t^a. \tag{2}$$

Capital earnings are $(1 - T)\frac{Y}{2}$, and in the steady-state equilibrium, this will equal $(r + \delta)K$. Hence, in steady state $K = (1 - T)\frac{Y}{2(r+\delta)}$, and rearranging the equation, we relate Y to T and G,

$$Y = (1 - T)\frac{G^{2a}}{2(r + \delta)}. \tag{3}$$

The public good is assumed to be provided by a government which is dominated by oligarchs. These receive a revenue of $T\frac{Y}{2}$, which may also be enhanced by a proportional foreign aid subsidy towards public investment, θ. In addition, we incorporate a flat rate provision DY of foreign aid relative to GDP, which is directly invested in public goods provision.

However, the oligarchs choose to consume proportion γ of their income, while only reinvesting share $(1 - \gamma)$.[10] It follows that investment in the public good will be $\left(\frac{1-\gamma}{1-\theta}\frac{T}{2} + D\right)Y$, and in a steady-state, this will just cover depreciation and interest on the public good stock, so that, after manipulation,

$$G^{1-2a} = \left(\frac{1 - \gamma}{1 - \theta}\frac{T}{2} + D\right)\frac{1 - T}{2(r + \delta)^2}. \tag{4}$$

Substituting back into 3, we obtain the steady-state solution for income,

$$Y = (r + \delta)\left(\frac{(1 - T)}{2(r + \delta)^2}\right)^{\frac{1}{1-2a}}\left(\frac{1 - \gamma}{1 - \theta}\frac{T}{2} + D\right)^{\frac{2a}{1-2a}} \tag{5}$$

Workers' consumption, v, is half GDP, or $\frac{Y}{2}$, while oligarchs' consumption, c, is proportion γ of tax revenue, in other words $\gamma T\frac{Y}{2}$ or $\gamma T v$.

Before analyzing the underlying political economy and the role of human rights, it is worth considering

[10] It is, of course, possible that the public good might be funded from borrowing, but in a longer-term model this will need to be paid for by tax.

the effects of the 'taxation' rate, T (which may include bribes and other forms of appropriation of rent) and the oligarchs' rate of consumption out of rent, γ. The effects on workers' consumption, v, and oligarchs' consumption, c, are shown in Figure 3, below, for the numerical case where $a = 0.3$, r = $\delta = 0.05$ and there is no aid, so $\theta = D = 0$, Note that these numbers have been chosen for tractability: it is the qualitative results that we wish to emphasize.

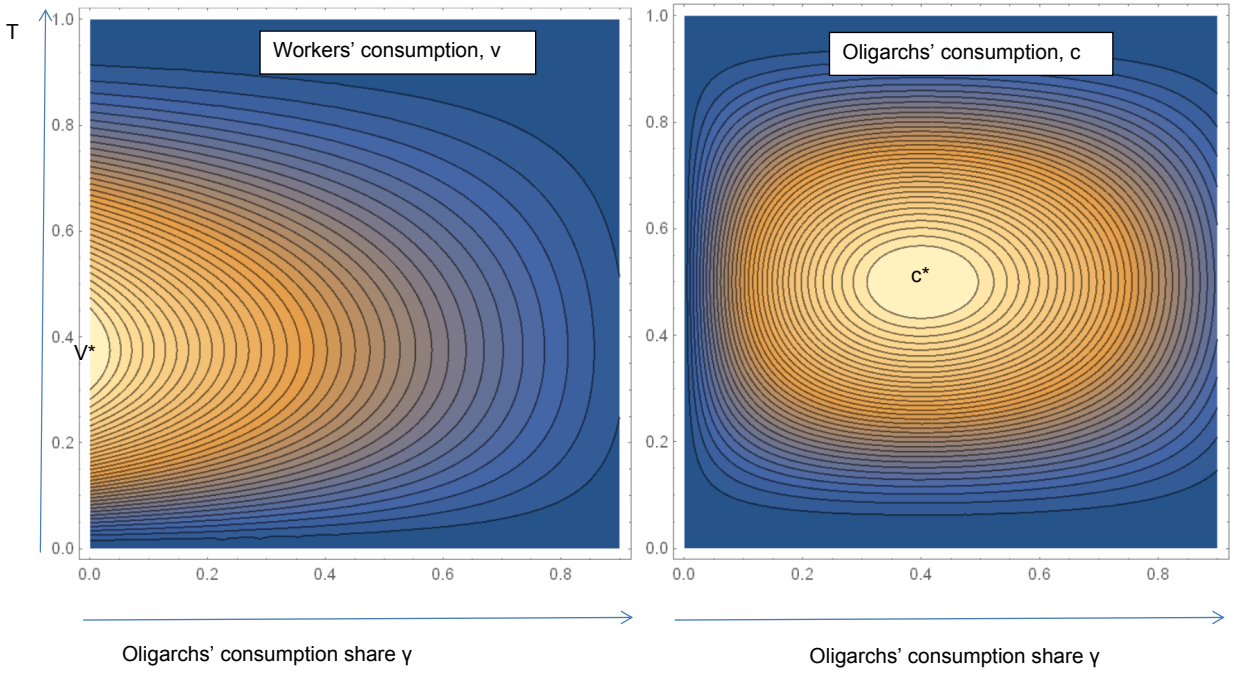


Figure 3: Labor income and oligarchs' consumption as functions of the tax rate, T, and oligarchs' consumption rate, γ. r and δ both set to 0.05

While there is a conflict of interests between workers and oligarchs, this is over a limited range of parameters. Workers are happy to pay some taxes, to fund the public good. Likewise, oligarchs are happy to invest up to a point in a public good, which raises the long-term taxpaying potential of the economy, as long as they are consuming some of that tax revenue. The disagreement is therefore between the two blisspoints v^*, with $\gamma = 0$ and $T = 0.375$, which maximize consumer incomes, and c^*, with $T = 0.5$ and $\gamma = 0.4$, which maximize oligarchs' consumption. Nevertheless, given the presence of a growth multiplier in the economy, the difference in workers' incomes between the two points is considerable.[11] The effect of the public good parameter on GDP, a, makes a significant difference in this: the lower a is, the more divergent are the interests of workers and oligarchs, while as a tends towards $\frac{1}{2}$ and the model tends to endogenous growth, the interests become more convergent.

[11] In our illustrative numerical case, a ratio of GDP of 2.4 to 1

To consider the optimization decision, we differentiate v and c with respect to T and γ, setting them equal to zero. We start considering the optimization of v, which is most easily done by noting that optimization can also be carried out in logs.

$$\frac{\partial lnv}{\partial T} = \frac{1}{2a-1}\left[\frac{2a\left(1-\gamma\right)}{\left(1-\gamma\right)T+2\left(1-\theta\right)D} - \left(1-T\right)^{-1}\right]. \tag{6}$$

Hence, setting this equal to zero and rearranging, we find the optimum from the point-of-view of the workers:

$$T^{*} = 2\frac{\left(1-\gamma\right)a-\left(1-\theta\right)D}{\left(1+2a\right)\left(1-\theta\right)}. \tag{7}$$

Note that for workers, the optimal level of γ is trivially zero. Simplification of T^{*} is simple where aid is a proportional subsidy to public good provision ($D=0$): in this case, T^{*} is constant at $\frac{2a}{1+2a}$, independent of aid. Also note that, where $D>0$, $\frac{\partial T^{*}}{\partial D}<0$, so that, where aid is simply given as a fixed proportion of national income, impatient workers will choose to consume a higher proportion of their incomes rather than invest in the public good.

We find a very similar story when optimizing with respect to c. In this case, $lnc = ln\gamma + lnT + lnv$, so that when we differentiate this with respect to T, $\frac{\partial lnc}{\partial T} = \frac{1}{T} + \frac{\partial lnv}{\partial T}$. Setting this equal to zero produces a more complicated quadratic equation, where the taxation rate to optimize oligarchs' consumption is:

$$T^{**} = \frac{1-\gamma-4\left(1-\theta\right)\left(1-a\right)D \pm \sqrt{\left(1-\gamma-4\left(1-\theta\right)\left(1-a\right)D\right)^{2}+16\left(1-\gamma\right)\left(1-\theta\right)\left(1-2a\right)D}}{4\left(1-\gamma\right)}. \tag{8}$$

However, this becomes quite simple if we set $D=0$, in which case T^{**} is constant and equal to $\frac{1}{2}$.

By similar means, we deduce that

$$\frac{\partial lnc}{\partial \gamma} = \frac{1}{\gamma} - \frac{2\alpha T}{(1-2\alpha)((1-\gamma)T+2D(1-\theta)))}. \tag{9}$$

In this case, the solution for γ is

$$\gamma^{**} = \frac{\left(1-2a\right)\left(2\left(1-\theta\right)D+T\right)}{T}, \tag{10}$$

and when $D=0$, oligarchs will also set a constant rate of $\gamma^{**}=1-2a$.

Henceforth, we consider the more tractable case, where $D=0$ and aid is a per unit subsidy on public good provision, where we have shown that aid does not shift either point v^{*} or c^{*}, In this case, adding aid does not affect tax rates or oligarchs' consumption rates, so that, in an oligarch-dominated economy (close to point c^{*}), a larger proportion of aid is wasted in extra consumption by the oligarchy. Nevertheless, it is possible to show that, on the simple functional forms which we have assumed, a given rise in the percentage share of aid to GDP will have the same proportional effect upon GDP (it is just that GDP is higher in a less oligarch-dominated

economy).[12] This assumption, however, does not hold once we allow for a poverty trap, which we do below.

3.1 Nash bargaining

We should now consider the present value of consumers' and oligarchs' incomes. In principle, it would be interesting to consider the effects of different time preferences - however, we abstract from this, to keep the model simple, and just assume that both groups discount income or consumption at the market rate of return on capital, rate r, so that the present value of workers' incomes and oligarchs' consumption are proportional to c and v respectively. To solve the model, we need to make a behavioral assumption about the governance of the economy. In line with standard Nash bargaining theory, we assume that parameters T and γ will serve to optimise a Nash bargaining variable, N.

$$N = \omega.ln\left(v - \bar{v}\right) + \left(1 - \omega\right).\left(lnv + ln\gamma + lnT\right). \tag{11}$$

We are setting $\bar{v}$ as the workers' disagreement point, which in a poor economy might be interpreted as reflecting a subsistence minimum wage, in the tradition of Lewis (1954), below which workers would not move to the modern sector. Perhaps more realistically, it could be seen as reflecting the minimum efficiency wage, as in Shapiro and Stiglitz (1984). Note that, as in Burnside and Dollar (2000), poverty constrains the ability of a poor country, both to invest (raising T and keeping γ low) or to spend on oligarchs (raising γ). In any case, in a developing country this is seen as something largely exogenous. By contrast, the bargaining share parameter is endogenous, reflecting political bargaining strength. We assume that the primary purpose of repression of human rights, H, (worse human rights = higher H) is the means by which oligarchs can increase their Nash bargaining share. As a simple case of this we set $\frac{1-\omega}{\omega} = H \Longrightarrow \omega = \frac{1}{1+H}$. This implies that, to model the outcome of bargaining in the economy, we maximize

$$N^{'} = ln\left(v - \bar{v}\right) + H\left(lnv + ln\gamma + lnT\right). \tag{12}$$

The first order conditions for the Nash bargaining solution are therefore

$$\frac{\partial N^{'}}{\partial \gamma} = \frac{\partial lnv}{\partial \gamma}\left(\frac{v}{v - \bar{v}} + H\right) + \frac{H}{\gamma} = 0. \tag{13}$$

$$\frac{\partial N^{'}}{\partial T} = \frac{\partial lnv}{\partial T}\left(\frac{v}{v - \bar{v}} + H\right) + \frac{H}{T} = 0. \tag{14}$$

The Nash bargaining setup is shown graphically in figure 4. The two contour plots from figure 3 have been superimposed, and the core - the line of points where the two sets of indifference curves are tangent, joining

[12] The proof is that, when we assume $D = 0$, T and γ do not change with aid (although they differ according to workers' and oligarchs' bargaining power, and income is just an isoelastic function of $(1 - \theta)$.

v^* and c^* - has been drawn in (in red) along with the Nash bargaining outcome, N^*. Note that, if workers' bargaining share ω is higher, T and γ will be relatively low, and the outcome will be close to v^*. Since v is proportional to Y, GDP will be higher near v^*. A lower workers' share parameter will shift N^* towards c^*, and it is relatively trivial to show that Y will monotonically decline with respect to ω and hence with respect to H.

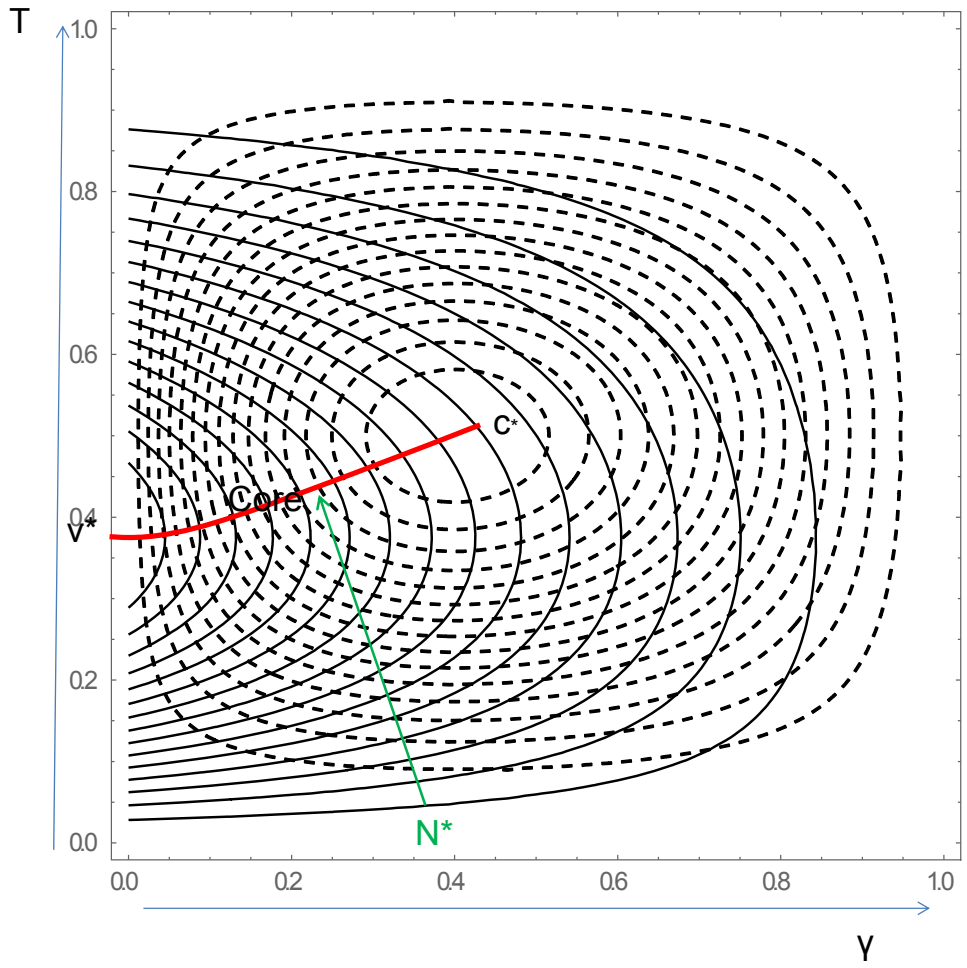


Figure 4: The unconstrained Nash bargaining problem. The core links v^*, and c^*. The position of the Nash bargaining outcome, N^* depends upon H. Higher H shifts N^* closer to c^* raising T and γ and lowering Y.

3.2 Nash bargaining with a subsistence minimum wage

Much of the literature on aid focuses on the role of poverty traps, which imply specifically that a country has such low incomes that its ability to finance investment, particularly in public goods, is constrained without assistance. We model this in the Nash bargaining setup in the previous subsection. In particular, we now consider the possibility that $v > \tilde{v}$, the value of v which would occur, in the absence of aid, when policy is

at point c^*. In these circumstances, this sets a disagreement point, which constrains the core of the bargaining game, so that oligarchs are unable to reach c^*. Standard Nash bargaining theory, as in equation 12, indicates that introducing this restriction on the core will shift the Nash bargaining solution leftward from N^* in the unconstrained solution in figure 4, towards the workers' optimal point, v^*.

This is shown in figure 5 below. The minimum workers' income restricts the core to the range between v^* and $\underline{V}$ without aid, leading to Nash bargaining point at $\ddot{N}$.

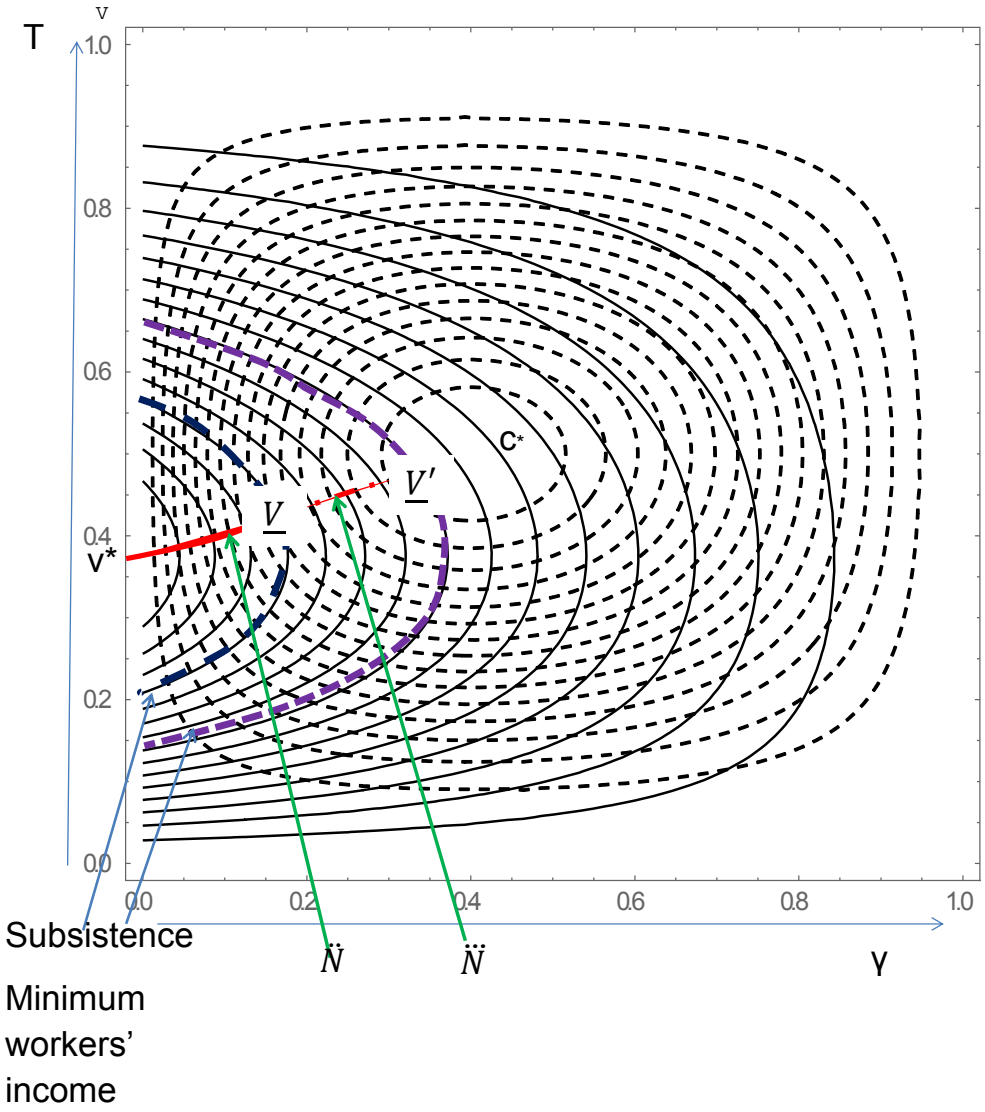


Figure 5: The constrained Nash bargaining problem. Without aid, the subsistence minimum workers' income constrains the core to the range between v^* and $\underline{V}$ without aid, or between v^* and $\underline{V'}$ with aid.

Aid increases the capital stock and GDP, allowing an extension of the core to $\underline{V'}$, as the higher capital stock makes it easier to meet workers' needs. However, this leads to a rightward shift in the Nash bargaining point to

$\dddot{N}$, so that increased T and γ partially offset the GDP gains. The diagram shows that, in the case of a constrained bargaining problem, due to a poverty trap, the positive effects of aid on GDP are offset by negative effects due to reduced investment by the oligarchs. Note however, that the strength of this effect depends upon the Nash bargaining weight, ω, which we argue is closely linked to repression. If repression, H, is weak, then workers' bargaining power ω is strong, and both $\ddot{N}$ and $\dddot{N}$ are close to v^*, not moving outwards much as aid is given. By contrast, where H is bad, then $\ddot{N}$ is close to $\underline{V}$ and $\dddot{N}$ is close to $\underline{V'}$, so that the policy outcome shifts strongly to the right, with an increase in oligarchs' consumption as aid is increased. It is this differential marginal effect upon oligarchs' consumption, which occurs only in the case of a poverty trap, that leads to differential proportional effects of aid upon GDP: namely, that where repression is present and there is a poverty trap, the gains to GDP from aid will be less than where there is less repression. These results are shown algebraically in 7.

In the analysis above, aid still increases GDP, although the positive effect is reduced through the policy feedback when there is a poverty trap and oligarchs are engaged in repression. However, we should also consider the possibility that aid might even, in some circumstances, lead to a reduction in GDP. This could potentially happen where aid is a subsidy to consumption, rather than investment. In this case, if aid directly supports workers' incomes (rather than raising GDP, from which workers gain something), there will still be an outward shift in $\underline{V}$, as in 5, and, depending upon oligarchs' bargaining strength, there will be a corresponding rise in oligarchs' consumption. In this case, however, there will be no boost to investment from the aid, so that GDP will be expected to fall.

In conclusion to this section, particularly in low income countries, our analysis suggests that it is important to look at underlying governance as well as other indices (such as corruption) in assessing the risk of aid being diverted to less productive causes.

4 Data and measures

We focus on a specific group of countries, namely on Least Developed Countries (LDC) as defined and listed by the UN (UN-OHRLLS). Primarily this reduces the sample selection bias that Burnside and Dollar (2000) were heavily criticized for (Easterly et al., 2004), on the grounds that we are choosing a UN-defined list. Additionally non-aid recipients were removed in order to avoid any bias. As such, conclusions of this study will only be directly applicable to LDCs. Focus on LDCs also allows this study to specifically model those countries that have been deemed to be most fragile and have been argued to posses different attributes to other developing countries (Collier, 2008). Although LDCs are not a subset of Collier's Bottom Billion countries, there is a degree of overlap and the suggestion to investigate Bottom Billion countries in their own right applies equally to LDC. A list of countries in the sample is provided in Appendix.

4.1 Human rights data

Our human rights measure (HR Factor) draws on Landman and Larizza (2009) and operationalizes the protection of civil and personal integrity rights using four 'standards-based' (Jabine and Claude (1992)) human rights scales: (1) the Amnesty International version of the Political Terror Scale, (2) the U.S. State Department version of the Political Terror Scale, (3) the Cingranelli and Richards (1999) Index of Personal Integrity Rights (http://www.humanrightsdata.com), and (4) the Freedom House civil liberties scale (Landman and Larizza (2009)), suggesting that they may be measuring aspects of the same underlying dimension (see also Edwards et al. (2018)). Given this degree of agreement among the different scales, we used principal components factor analysis to reduce the group of interrelated human rights variables into a single component with high factor loadings, which indicate a strong relationship between each variable and the common underlying dimension they all measure. Moreover, the component represents a set of human rights violations that are consistent with Cingranelli and Richards (1999) findings about the uni-dimensionality of their aggregate 'personal integrity rights scale'. Once extracted, the human rights factor score has been inverted to make its substantive meaning more intelligible, where low values of the factor score correspond to a low protection of human rights (high violations) and high values correspond to a high protection of human rights (low violations). This variable has a mean of 0, a minimum value is -2.7 and the maximum value is 1.97.

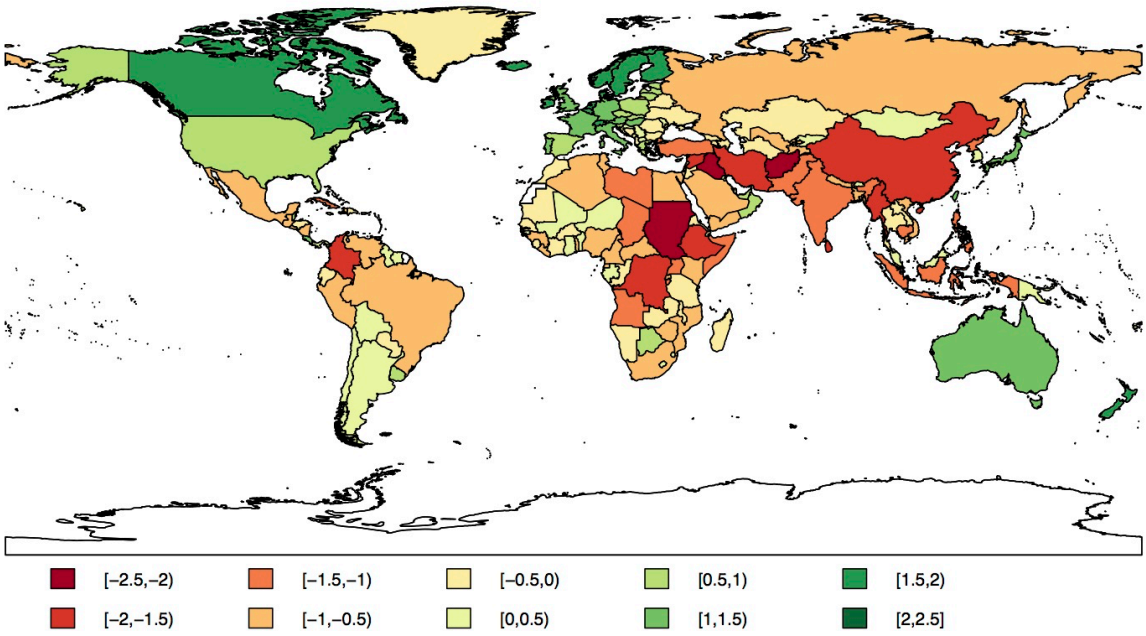


Figure 6: Human Rights Distribution, this graph represents the average inverse human right factor for all countries including Least Developed Countries (LDCs). Note, positive HR Factor indicates better human rights protection.

There is considerable discussion of the choice and construction of such indices in Landman and Larizza (2009): in particular, we update here their principal components measure. The principal component in this case

accounts for about 0.6687 of the total variance of the four measures, and we can view it as a measure of the components of human rights provision around which these four diverse indices agree. Moreover, this method delivers a normally distributed variable around zero, with minimum value of -2.003749 and max 2.630825. The HR variable is inverted (HR factor) so that higher is a more favorable state of human rights and is intuitively simpler to interpret. Figure(6) reports the HR factor distribution across the globe. This clearly emphasizes the low level of human rights protection in some African countries as well as in Asia and Latin America countries with respect to Europe, Australia and North America.

The domestic conflict variable, the Global Conflict Risk Index (GCRI) measure of internal conflict, conflicts with neighbors and lack of democracy were adopted as control variables.The scale measurement of these variables capture the overall risk for civil war and includes the threat of a military coup, terrorism, political violence and aggregate levels of civil unrest. This time series approach provides a much more accurate depiction of the state of domestic characteristics as a dummy variable. This argument is identical to that for the utilization of the KOF index over the Sachs Warner index for trade openness which was discussed at length in the above chapter. For aid and GDP per capita, data from the World Bank and OECD were compiled. Moreover, the data span over the period 1989-2011.

Table 1: **Summary Statistics**

variable	**mean**	**sd**	**min**	**max**	**N**
ln(GDP pc)	6.136295	.7066784	4.242465	9.674838	1221
ln(NetODA)	3.769015	1.04205	-1.789921	6.505793	1437
ln(NetODA) · HR factor	-1.275555	3.503605	-12.56649	11.43544	1437
HR factor	-.4663182	.9616243	-2.630825	1.885261	1440
Income Inequality	4.576544	1.458618	2.028978	8.92001	1002
Inflation	.1719094	1.219403	-.3156591	41.45108	1202
Gross Enrollment Ratio Primary Sch.	84.15685	32.91748	15.82211	211.2971	1162
ln(KOF)	3.400578	.2874051	2.42445	3.989039	1428
Ethnicity	4.264471	2.108191	1	10	1002
Internal Conflict	2.636727	3.780869	0	10	1002
Neighbors Conflict	6.035928	4.07659	0	10	1002
Lack of Democracy	5.22006	2.661793	.5	10	1002
Child Mortality Rate	143.0061	58.4794	13.9	316.8	1434

Note: The Table presents summary statistics of the main variable used in the analysis.

5 Econometric specification

We start our empirical strategy by using a standard Per-Capita GDP (y) equation:

$$ln(y_{it}) = ln(y_{it0}) + \Delta ln(y_{it}) \tag{15}$$

where $\Delta ln(y_{it})$ depends in equilibrium on the level of public investment, $ln(I_{it})$[13], which in turn can positively depend on aid, better human rights, and economic globalization, while low human capital and inflation can negatively influence investment.

$$ln(y_{it}) = \beta_0 + \beta_1 ln(I_{it}) + \varepsilon_{it} \tag{16}$$

$$\begin{aligned} ln(I_{it}) = \beta_2 ln(NetODA_{it}) + \beta_3 HRfactor_{it} + \beta_4 ln(KOF)_{it} + \\ + \beta_5 GrossEnrol.RatioPrimary_{it} + \beta_6 Inflation_{it} + \epsilon_{it} \end{aligned} \tag{17}$$

Substituting Eq.17 and Eq.16 in Eq.15 and applying a partial adjustment growth model, as well as adding additional controls yields:

$$\begin{aligned} ln(GDPpc_{it}) - ln(GDPpc_{it-1}) = \beta_0 ln(GDPpc_{it-1}) + \beta_1 ln(NetODA_{it}) + \beta_2 ln(NetODA_{it}) \cdot HRfactor_{it} + \\ + \beta_3 HRfactor_{it} + \beta_4 ln(KOF)_{it} + \beta_5 ln(INEQ_{it}) + \beta_6 GrossEnrol.RatioPrimary_{it} + \\ + \beta_7 Inflation_{it} + X_{it}^{'} \beta_x + \gamma_t + \gamma_i + \varepsilon_{it} \end{aligned} \tag{18}$$

Here the dependent variable is the difference in log GDPpc between t and t-1 -i.e the growth rate of GDPpc. Explanatory variables include aid per capita (NetODA), inverse of human right $HRfactor_{it}$, economic globalization index (KOF_{it}), income inequality $(INEQ_{it})$, $Inflation_{it}$ and a human capital indicator - i.e. gross rate of enrollment (both genders considered) in primary school - for country i over time t. Additional control variables $(X_{it}^{'})$ are included which include recent conflict, subnational ethnic diversity and child mortality rate. Furthermore, time and country fixed effects are accounted for. Instruments used are HR factor$_{it-1}$, $ln(KOF)_{it-1}$, ln(population)$_{it-1}$) and $ln(INEQ_{it-1})$,

Endogeneity is a significant hazard due to the possible simultaneity of the aid and GDP regressions (Burnside and Dollar, 2000; Mosley et al., 2004). Although the endogeneity of non-income dimensions has been discussed above, especially through new conditionality in Mosley et al. (2004) and conceptually through Sen (2001) the empirical rendition of all the endogenous variables in an n-equation simultaneous equation model is beyond

[13]This isoelastic formulation is broadly consistent with the model outlined in section 3. Private investment is assumed to respond positively and endogenously to a boost in public good provision.

the scope of this paper. Therefore the BD2000 approach to modeling aid endogeneity will be implemented, mentioning that the other dimensions of development, such as human rights, are also potentially endogenous. Thus, to address these issues, we use system GMM as an alternative estimation method to the 2SLS model.

5.1 Results

5.2 The basic aid-growth equation

The results, in Table 2, provide estimation of a very basic aid-growth relationship, without convergence. We carry out estimation by an ordinary least squares method (OLS), fixed effect (FE) model[14] and by dynamic panel model[15] (GMM). The results are consistent with widespread skepticism about the effectiveness of aid. That is, while the point estimates from three of the four estimators suggest a positive relationship between aid and growth of GDP per capita, this is not statistically significant.

Table 2: The aid growth relationship without conditionality

Variables	(1)	(2)	(3)	(4)
	LDCs			
	OLS	FE	2SLS	GMM
ln(NetODA)	-0.000946	0.00345	0.0155	0.0103**
	(0.00313)	(0.00559)	(0.0217)	(0.00436)
Lag .ln(GDP pc)	0.00573	-0.0714***	-0.0693***	
	(0.00577)	(0.0255)	(0.0258)	
Lag Change ln(GDP pc)				0.221**
				(0.110)
Constant	-0.0530	0.393***		-0.0435**
	(0.0344)	(0.141)		(0.0213)
Hausman test			127.52***	
Arellano-Bond test for AR(2)				-0.33
				[0.738]
Observations	922	922	863	849
R-squared	0.060	0.131	0.137	
Country Dummy	-	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
Number of id		42	39	39

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1; The Table reports the point estimates of the growth model by using different alternative specifications. The results show a consistent positive effect of the interaction term between aid and ihr factor.

[14] Notice the Hausman test indicates a preference of this model with respect to a random effect model

[15] This model was initially developed by Arellano and Bond (1991) and subsequently developed by Arellano and Bover (1995); Blundell and Bond (1998).

Note, also, that FE and 2SLS estimators show a significant negative relationship between lagged GDP per capita and growth. This should be seen as supporting growth convergence, rather than fully endogenous growth, and is an important reason why we chose to couch our theoretical model in section 3 as convergent. The instrumental variable approach in column (3) is highly supported by a Hausman test, while the test of autocorrelation AR(2) in column (4) is rejected. This suggests that these latter methods are able to better capture causal effect and solve for potential endogeneity of the aid variable.

5.3 Estimation of conditionality upon non-income factors

While Table 2 finds only a weak and insignificant benefit of aid for growth, Table 3 extends the equations above, by considering whether aid might be effective conditionally when applied in a good human rights policy environment. Hence, we introduce HR both in levels and, more importantly, as an interaction term with aid. The aid-policy interaction term was found to have a significant and positive impact on per capita growth rate, which is consistent across all different methods, with FE, 2SLS and GMM all yielding very similar parameter estimates. The statistical significance of this interaction term and its positive sign is in clear support of Sen (2001)'s development as freedom hypothesis as introduced into the Burnside and Dollar (2000), which modified the endogenous growth theory framework. These results suggest that human rights do indeed have indirect productive effects, complementing their intrinsic value upon which much of the focus has previously rested.

Interestingly, these results also suggest that the aid variable, $ln(NetODA)$, is positive across different models, while statistically significant in the FE and GMM methods. For example, in the GMM estimation, a 1 per cent increase in aid leads to a 1.4 per cent rise in the growth rate, before taking account of the interaction with aid. Hence, our model suggests that the least developed countries that experience inflow of aid are able to boost their GDP per capita growth. On the other hand, the aid-policy interaction term suggests among all methods a positive relationship with growth of GDPpc. That is, the FE, 2SLS and GMM models all emphasize a short-run gain of 0.02 percent increase in GDPpc, for every 1% increase in aid, ln(NetODA), and an unit increase in HR factor. The first three models, which employ a convergent growth formulation, will imply that this effect increases in the long-run, while in the GMM method, there is a lasting increase in the growth rate.

Table 4 includes in the model additional control variables, such as inflation, economic globalization, income inequality and child mortality rate. These variables control for potential macroeconomic shocks that those countries might experience, hence omitting them might bias the results of interest. However, the inclusion of these controls does not eliminate the significance of the main effect of aid and aid-policy interaction term, column(4), but the magnitude of aid-policy interaction term has relatively declined both in 2SLS and GMM models, while OLS and FE models see an increase in this interaction term compared to the results of Table 3. Obviously, macroeconomic shocks that affect the economy, i.e. inflation or economic globalization, have important consequence on GDP per capita growth. Thus, failure to account for such shocks might result in overestimating the effect of aid-policy interaction term. Furthermore, the inclusion of these terms is well supported by the increase

Table 3: Conditionality Hypothesis with Non-Income Dimension Effect

Variables	(1)	(2)	(3)	(4)
	LDCs			
	OLS	FE	2SLS	GMM
ln(NetODA)	0.00212	0.0203***	0.0125	0.0143**
	(0.00417)	(0.00686)	(0.0314)	(0.00628)
HR Factor	-0.0261**	-0.0507	-0.0504*	-0.0473*
	(0.0124)	(0.0346)	(0.0264)	(0.0263)
ln(NetODA)·HR Factor	0.00954**	0.0211*	0.0212***	0.0192**
	(0.00428)	(0.0111)	(0.00729)	(0.00805)
Lag ln(GDP pc)	-0.00218	-0.0882***	-0.170***	
	(0.00580)	(0.0160)	(0.0432)	
Lag Change ln(GDP pc)				0.128
				(0.128)
Constant	-0.0160	0.440***		-0.0746*
	(0.0322)	(0.103)		(0.0407)
Hausman test			180.03***	
Arellano-Bond test for AR(2)				.436
				[0.6627]
Observations	966	966	751	736
R-squared	0.098	0.201	0.273	
Country Dummy	-	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
Number of id		40	39	39

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1; The Table reports the point estimates of the growth model by using different alternative specifications. The results show a consistent positive effect of the interaction term between aid and ihr factor.

in the R-squared term.

While the human rights term on its own is negative (albeit of low significance), it is worth noting that, once we apply the mean level of ODA from the Summary Statistics table, the interaction term with aid suggests that the differential of per capita GDP with respect to HR is positive. The aid-policy interaction term suggests that developments in human rights have a positive impact on the ability of aid to boost economic growth. This is positive and statistically significant across all models. This suggests that governments implementing measures to increase freedom and human rights protection will see an extra beneficial effect in the growth of GDP per capita. As a result, one could tentatively suggest that countries seeking to get the most from inflow of aid should address measures that target improvement in economic development alongside enhancing economic factors in

Table 4: Conditionality Hypothesis and Macroeconomic Controls

Variables	(1)	(2)	(3)	(4)
	LDCs			
	OLS	FE	2SLS	GMM
ln(NetODA)	0.00661	0.0180**	-0.0224	0.0171***
	(0.00510)	(0.00752)	(0.0430)	(0.00657)
HR Factor	-0.0300*	-0.0572	-0.0310	-0.0476**
	(0.0158)	(0.0420)	(0.0297)	(0.0239)
ln(NetODA)·HR Factor	0.0106**	0.0220*	0.0159**	0.0181**
	(0.00522)	(0.0129)	(0.00734)	(0.00738)
ln(Econ. Globalization)	-0.0177	0.0604	0.0855	-0.0214
	(0.0137)	(0.0473)	(0.0573)	(0.0365)
ln(Income Inequality)	-0.00249	0.00617*	0.00680	0.00155
	(0.00213)	(0.00361)	(0.00432)	(0.00360)
ln(Child Mortality Rate)	-0.000119	-0.000441	-0.000468	-0.000351
	(8.08e-05)	(0.000314)	(0.000395)	(0.000233)
Inflation	0.0173	-0.0165	-0.0201	0.00756
	(0.0122)	(0.0168)	(0.0167)	(0.00948)
Lag ln(GDP pc)	-0.000907	-0.183***	-0.190***	
	(0.00736)	(0.0496)	(0.0479)	
Lag Change ln(GDP pc)				0.134
				(0.134)
Constant	0.0610	0.876***		0.0456
	(0.0403)	(0.291)		(0.144)
Hausman test			175.64***	
Arellano-Bond test for AR(2)				.33685
				[0.7362]
Observations	737	737	710	696
R-squared	0.121	0.313	0.269	
Country Dummy	-	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
Number of id		38	38	38

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1; The Table reports the point estimates of the growth model by using different alternative specifications. The results show a consistent positive effect of the interaction term between aid and HR factor, while we control for additional macroeconomic variables.

non-income dimension. The point estimate from Table 4, column(4), suggests that, in the GMM case, every 1% increase in aid, ln(NetODA), leads to an increase of about 0.017 percent in the rate of per capita GDP

growth, before including the interaction effect with human rights. Furthermore, the effect coming from non-income dimension, our interaction term of aid-policy ln(NetODA)·HR Factor, adds an additional 0.018 percent and increases with improvement in human rights factor. This supports our conclusion that development in non-income dimension helps boost economic growth.

Table 5: Conditionality Hypothesis with Control Variables

Viariables	(1)	(2)	(3)	(4)	(5)	(6)
	LDCs					
			Without HR Factor		With HR Factor	
	OLS	FE	2SLS	GMM	2SLS	GMM
ln(NetODA)	0.0105*	0.0195**	-0.0470	0.00596	-0.0338	0.0168**
	(0.00583)	(0.00741)	(0.0465)	(0.00478)	(0.0517)	(0.00732)
HR factor	-0.0627***	-0.0837*			-0.0568*	-0.0766***
	(0.0216)	(0.0440)			(0.0307)	(0.0297)
ln(NetODA) · HR factor	0.0181***	0.0265**	0.00532***	0.00277**	0.0201***	0.0232***
	(0.00611)	(0.0122)	(0.00185)	(0.00116)	(0.00763)	(0.00801)
ln(Econ. Globalization)	-0.0138	0.0554	0.0732	-0.0383	0.0756	-0.0336
	(0.0143)	(0.0538)	(0.0588)	(0.0419)	(0.0568)	(0.0389)
ln(Income Inequality)	-0.00402	0.00362	0.00647	0.00180	0.00548	0.000580
	(0.00252)	(0.00419)	(0.00506)	(0.00362)	(0.00509)	(0.00385)
Child Mort. Rate	4.34e-05	-0.000274	-0.000417	-0.000284	-0.000345	-0.000167
	(0.000130)	(0.000351)	(0.000415)	(0.000275)	(0.000409)	(0.000290)
Internal Conflict	-0.00502***	-0.00642**	-0.00560***	-0.00512**	-0.00676***	-0.00669**
	(0.00163)	(0.00267)	(0.00173)	(0.00226)	(0.00170)	(0.00277)
Neighboring Conflict	0.00240**	0.00103	0.00151	0.00324	0.00133	0.00291
	(0.000980)	(0.00137)	(0.00144)	(0.00239)	(0.00134)	(0.00230)
Inflation	0.0150	-0.00908	-0.00632	0.0166	-0.00915	0.0115
Ethnic Diversity	-0.00177	-0.00297	-0.00433	-0.00342	-0.00272	-0.00168
	(0.00229)	(0.00441)	(0.00318)	(0.00331)	(0.00273)	(0.00228)
Lack of Democracy	0.00338***	0.00162	4.44e-05	0.00117	0.000300	0.00153
	(0.00108)	(0.00188)	(0.00200)	(0.00156)	(0.00198)	(0.00168)
Gross Enrol. Ratio Primary	0.000346**	0.000420	0.000331	0.000357	0.000409	0.000493
	(0.000164)	(0.000352)	(0.000261)	(0.000287)	(0.000256)	(0.000306)
Lag ln(GDP pc)	-0.00261	-0.181***	-0.186***		-0.184***	
	(0.00823)	(0.0454)	(0.0452)		(0.0433)	
Lag Change ln(GDP pc)				0.150		0.113
				(0.128)		(0.106)
Constant	-0.0356	0.826***		0.122		0.0195
	(0.0578)	(0.286)		(0.175)		(0.175)
Hausman test			169.49***		221.48***	
Arellano-Bond test for AR(2)				.33744		.16764
				[0.7358]		[0.8669]
Observations	702	702	676	663	676	663
R-squared	0.186	0.367	0.259		0.305	
Country Dummy	-	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Number of id		37	37	37	37	37

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1; The Table reports the point estimates of the growth model by using different alternative specifications. The results show a consistent positive effect of the interaction term between aid and HR factor.

5.4 The effect of conflicts and other political variables

The conditionality hypothesis states that the effect of aid is conditional upon a sound policy environment. As a result, the effect of aid on per capita growth is amplified by the aid-policy interaction term. However, we might expect that omitting from this analysis the effects of internal conflicts or conflicts in neighboring countries might result in an omitted variable bias, hence leading to an over identification of our point estimate for the aid-policy interaction. This is important because Landman and Larizza (2009) report a strong correlation between internal conflict within a country and bad human rights. In addition, other factors such as ethnic diversity are important. Thus, Table 5 reports the results by accounting for a number of additional control variables -i.e. conflicts, enrollment in primary eduction and ethnic diversity. The inclusion of these additional controls does not however impact the significance of aid-policy interaction.

Table 5 reports a number of model specifications. Column(3)-(4) differ from column(5)-(6) because the latter account for the effect of the HR factor. The model confirms that internal conflicts have a negative effect upon economic growth, which is consistent and significant across all specifications. Indeed, a point increase in the internal conflict scale reduces the growth rate by about 0.7%. Interestingly, there is little significant effect from external conflicts.

Aid has a statistically positive effect on GDP growth as estimated by OLS, FE and GMM: i.e. the estimated elasticity for aid variable suggests that every 1% increase in aid, ln(NetODA, leads to about 0.0168 per cent, column(6). On the other hand, the aid-policy interaction term highlights a statistically significant and positive effect across all specifications. This emphasizes the importance of development of freedoms as a source of gain in economic growth. The estimated elasticity suggests that countries with better development of freedom or good governance are able to have a further advantage in economic growth.

It is worth noting that both the 2SLS and GMM estimators imply a very similar short-run effect of the interaction of aid and HR upon growth, although in the former the growth rate is convergent, while in the latter case, there is a permanent rise in the growth rate. The point estimate of the HR factor is negative suggesting a negative impact on GDP per capita growth. However, this must be weighed against the positive effect of HR in terms of enhancing the growth effects of ODA.

On the whole, the significant estimated elasticity for the lag per capita GDP in the FE and 2SLS models suggests that growth probably follows a convergent model, albeit the convergence may be extended, or magnified, compared to that in Solow (1956) - hence supporting the convergence hypothesis documented by Roubini and Sala-i Martin (1995). Conflicts, aid and the interaction with human rights are clearly important in determining the precise relative levels upon which countries converge, while our estimators suggest, perhaps surprisingly, that, while other control variables such as economic globalization, child mortality rate, democracy and education attainment are important factors that might lead to omitted variable bias, they turn out to be statistically insignificant (albeit, perhaps, important in their own right).

6 Robustness with respect to the variables in Burnside and Dollar (2000)

Burnside and Dollar (2000) 'BD2000') can be seen as the classic study supporting the 'aid conditionality' hypothesis. While our analysis in the previous sections follows strongly in that tradition, it is nevertheless sensible to test our results more directly against the approach in their equations. In particular, we note that BD2000 examine three main policy variables: inflation, openness and budget surplus/deficit. An initial regression is carried out using these variables as well as various other variables such as assassinations, ethnic fractionalization, M2/GDP and institutional quality. The coefficients from this regression for the first three policy indicators (inflation, openness and budget surplus) are then used to construct an aggregate 'policy' measure, which is then interacted with aid. Crucially, as in our analysis, the aid-policy interaction term is positive and significant, supporting the conditionality hypothesis.

We follow the same approach, with our more recent database for our sample of countries.[16] Since data on budget surplus (from the IMF) is not available for all of our sample, we carry out the exercise twice: the first time on our full sample, excluding budget surplus, and the second time on a subsample of countries, including budget surplus. Results of our analysis are shown in Table 6 below, for the first policy index and the full set of countries. We utilize the estimated coefficients from the fixed effects regression in column (5) to construct our policy index:

$$Policy_1 = -0.0129 \cdot Inflation + 0.0809 \cdot ln(Econ.Globalization)$$

Note that inflation and economic globalization have the expected signs in the fixed effects regression. The last three columns then include the policy index in levels, and its interaction term with aid, alongside our human rights measure and its interaction with aid. Note that the first policy index does not perform particularly well, either in terms of level or in terms of the interaction with aid. The interaction of aid with human rights continue to be significant in column (7) (OLS) and column (8) (FE), but not in the two stage least squares case, although it retains the expected sign.

We therefore proceed in Table 7 to investigate the smaller sample of countries, with the policy index constructed from three policy variables in column (5), including budget surplus:

$$Policy_2 = -0.116 \cdot Inflation + 0.201 \cdot ln(Econ.Globalization) + 0.000741 BudgetSurplus$$

Looking at the last three columns of Table 7, the results are quite revealing. First, the full policy index has a positive and strongly significant effect upon economic growth. This confirms the role of good economic management in promoting economic growth. However, the interaction term with aid is either insignificant or wrongly termed. By contrast, the interaction of human rights with aid is positive and strongly significant. This

[16] Note, we use the KOF index in preference to the Sachs-Warner index, as the latter shows very little variation across countries

Table 6: Burnside and Dollar (2000) Test: Policy$_1$

VARIABLES	(1) OLS	(2) FE	(3) 2SLS	(4) OLS	(5) FE	(6) 2SLS	(7) OLS	(8) FE	(9) 2SLS
Lag ln(GDP pc)	0.00443	-0.139***	0.0791	0.000760	-0.159***	-0.0808	0.000684	-0.159***	-0.273**
	(0.00658)	(0.0379)	(0.322)	(0.00704)	(0.0406)	(0.154)	(0.00698)	(0.0409)	(0.131)
ln(NetODA)	0.00576	0.0107**	2.699	0.00536	0.0163**	1.513*	-0.0481	0.0537	8.260
	(0.00470)	(0.00523)	(2.217)	(0.00477)	(0.00737)	(0.830)	(0.0632)	(0.0732)	(5.033)
Policy$_1$							-0.962	1.477	103.9
							(0.830)	(1.049)	(63.22)
ln(NetODA) · Policy$_1$							0.192	-0.131	-28.62
							(0.214)	(0.244)	(17.48)
HR factor				-0.0207	-0.0500	-1.070*	-0.0209	-0.0507	-0.275
				(0.0140)	(0.0300)	(0.591)	(0.0138)	(0.0304)	(0.184)
ln(NetODA) · HR factor				0.0106**	0.0213**	0.269*	0.0107**	0.0215**	0.0832
				(0.00488)	(0.00960)	(0.147)	(0.00485)	(0.00973)	(0.0541)
ln(Econ. Globalization)	-0.0226*	0.0362	-2.238	-0.0172	0.0809*	-0.923			
	(0.0132)	(0.0402)	(1.919)	(0.0142)	(0.0405)	(0.602)			
Inflation	0.0162	-0.00869	0.291	0.0161	-0.0129	0.173			
	(0.0127)	(0.0179)	(0.341)	(0.0131)	(0.0171)	(0.163)			
Ethnic Diversity	-0.00246	-0.00998	-0.128	0.00160	-0.00221	0.00580	0.00172	-0.00256	-0.0782
	(0.00348)	(0.00859)	(0.116)	(0.00342)	(0.00603)	(0.0264)	(0.00359)	(0.00604)	(0.0495)
Assassination	-0.00439	-0.0118	-0.454	-0.00477	-0.00325	0.0694	-0.00496	-0.00378	-0.113
	(0.00921)	(0.0145)	(0.396)	(0.00945)	(0.0101)	(0.0866)	(0.00962)	(0.00987)	(0.0805)
Ethnic Diversity · Assassination	0.000706	0.00399	0.0647	-0.00156	-0.000358	-0.00971	-0.00152	-0.000182	0.0372
	(0.00208)	(0.00292)	(0.0606)	(0.00223)	(0.00200)	(0.0182)	(0.00232)	(0.00199)	(0.0248)
M2/GDP	0.000162	0.000364	-0.0175	-2.59e-05	-6.99e-05	-0.0135*	-1.53e-05	-9.87e-05	-0.00734
	(0.000175)	(0.000365)	(0.0160)	(0.000213)	(0.000285)	(0.00804)	(0.000207)	(0.000292)	(0.00513)
Institutional Quality	0.00130	-0.00240	0.0955	0.00364***	0.000960	0.0433	0.00391***	0.000880	-0.0133
(Lack of Democracy)	(0.000836)	(0.00155)	(0.0819)	(0.000977)	(0.00134)	(0.0265)	(0.00102)	(0.00132)	(0.0122)
Constant	0.0112	0.745**		0.0476	0.648***		0.256	0.519	
	(0.0378)	(0.280)		(0.0397)	(0.233)		(0.230)	(0.326)	
Test for exogeneity of Aid χ^2			1.49 [0.4756]			3.64 [0.1622]			3.32 [0.1899]
Observations	746	746	746	713	713	713	713	713	713
R-squared	0.104	0.209	-	0.127	0.273	-	0.129	0.273	-
Country Dummy	-	Yes	Yes	-	Yes	Yes	-	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of id		38	38		38	38		38	38

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1; The Table reports the point estimates of the growth model by using different alternative specifications. In, particular here we use Burnside and Dollar (2000)'s definition of policy variable (without budget surplus variable due to missing values) as well as HR factor. Inflation is dropped in the last 3 columns due to multicollinearity with policy variable.

confirms our view of human rights as a good indicator of potential aid effectiveness.[17] Hence, our analysis suggests that the economic policy indicators have a positive effect on growth, but that human rights are a better indicator than economic policy in terms of predicting aid effectiveness.

Marginal effects

As a final exploration of the economic (as opposed to just statistical) significance of our results, we follow Cooray et al. (2017) in plotting out the marginal effects of aid, as a function of level of human rights provision. To do this, we use the estimates based upon column 8 of Table 7.

Table 8 and figure 7 analyse the marginal effects of aid across the distribution of countries by percentile on the human rights distribution. Again, the graph gives a clear indication: aid has a strongly positive effect at the higher ends of the human rights distribution. At the lower end, the marginal effect of aid may be negative, although this is within the confidence interval. Tentatively, this may support the idea raised in the end of section

[17] Note that, while human rights in levels, on their own, carry a negative sign, at mean levels of ln(NetODA) the differential of growth with respect to human rights is also positive

Table 7: Burnside and Dollar (2000) Test: Policy$_2$

VARIABLES	(1) OLS	(2) FE	(3) 2SLS	(4) OLS	(5) FE	(6) 2SLS	(7) OLS	(8) FE	(9) 2SLS
Lag ln(GDP pc)	-0.00433	0.0113	0.0458	-0.00833*	-0.0279	-0.101	-0.00921*	-0.0302	-0.0405
	(0.00433)	(0.0350)	(0.138)	(0.00502)	(0.0509)	(0.125)	(0.00512)	(0.0512)	(0.0394)
ln(NetODA)	0.0116***	-0.000891	-0.412	0.0153***	0.00765	0.364*	0.130**	0.0565	0.295
	(0.00394)	(0.00595)	(0.694)	(0.00571)	(0.00808)	(0.195)	(0.0546)	(0.0900)	(0.183)
Policy$_2$							0.751**	1.234**	2.348**
							(0.347)	(0.586)	(0.933)
ln(NetODA) · Policy$_2$							-0.163**	-0.0652	-0.380
							(0.0762)	(0.121)	(0.240)
HR factor				-0.0321	-0.0433	-0.400*	-0.0419**	-0.0494	-0.0818***
				(0.0204)	(0.0268)	(0.223)	(0.0191)	(0.0294)	(0.0307)
ln(NetODA) · HR factor				0.0106*	0.0149*	0.117*	0.0132***	0.0170**	0.0282***
				(0.00540)	(0.00750)	(0.0641)	(0.00497)	(0.00811)	(0.00950)
ln(Econ. Globalization)	0.00871	0.167**	0.975	0.0108	0.201***	-0.407			
	(0.0149)	(0.0695)	(1.422)	(0.0156)	(0.0680)	(0.393)			
Inflation	-0.0448	-0.107*	0.0492	-0.0432	-0.116*	-0.216			
	(0.0450)	(0.0544)	(0.283)	(0.0467)	(0.0609)	(0.155)			
Budget Surplus	0.000808*	0.000878	0.00781	0.000567	0.000741	-0.00569			
	(0.000473)	(0.000783)	(0.0121)	(0.000497)	(0.000860)	(0.00443)			
Ethnic Diversity	0.00616	0.00226	0.0748	0.0116**	0.00693	-0.0184	0.0107*	0.00612	0.00209
	(0.00480)	(0.00477)	(0.124)	(0.00582)	(0.00545)	(0.0171)	(0.00589)	(0.00597)	(0.00630)
Assassination	0.0185	0.00958	0.166	0.0304	0.0197	-0.0305	0.0288	0.0175	0.00676
	(0.0168)	(0.0245)	(0.271)	(0.0201)	(0.0240)	(0.0578)	(0.0205)	(0.0245)	(0.0218)
Ethnic Diversity · Assassination	-0.00450	-0.00180	-0.0360	-0.00755*	-0.00418	0.0106	-0.00687	-0.00368	-0.00124
	(0.00357)	(0.00479)	(0.0592)	(0.00434)	(0.00481)	(0.0133)	(0.00438)	(0.00487)	(0.00486)
M2/GDP	0.000579***	-0.00146*	0.00447	0.000143	-0.00156	-0.00819**	-0.000105	-0.00161	-0.00188**
	(0.000216)	(0.000771)	(0.00984)	(0.000277)	(0.00111)	(0.00402)	(0.000277)	(0.00105)	(0.000874)
Institutional Quality	0.00322***	0.000996	0.00993	0.00545***	0.00447*	0.00340	0.00562***	0.00456*	0.00498**
(Lack of Democracy)	(0.00119)	(0.00216)	(0.0173)	(0.00144)	(0.00258)	(0.00833)	(0.00141)	(0.00247)	(0.00232)
Constant	-0.0672	-0.610*		-0.147*	-0.569		-0.632**	-0.725	
	(0.0521)	(0.351)		(0.0797)	(0.409)		(0.246)	(0.610)	
Test for exogeneity of Aid χ^2			0.37 [0.8328]			4.05 [0.1317]			3.35 [0.1877]
Observations	224	224	222	203	203	201	203	203	201
R-squared	0.297	0.305	-	0.324	0.364	-	0.351	0.366	-
Country Dummy	-	Yes	Yes	-	Yes	Yes	-	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of id		25	23		24	22		24	22

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1; The Table reports the point estimates of the growth model by using different alternative specifications. In, particular here we use Burnside and Dollar (2000)'s definition of policy variable as well as HR factor.

3 that at least some of the aid given to the poorest countries is used for consumption (i.e. for humanitarian purposes rather than directly in productive investment), and hence may be growth-reducing in the most repressive and corrupt of these countries.

Table 8: Marginal effects of Net ODA at different levels of HR Factor

			Delta-method					
Value of HR Factor	Percentile $\widehat{HRFactor}$	Example 2011	Margin	Std. Err.	z	P>z	[95% Conf.	Interval]
-2.631	1%	Myanmar	-0.0135171	0.0158847	-0.85	0.395	-0.0446505	0.0176162
-1.858	10%	Bangladesh	-0.0060784	0.0109594	-0.55	0.579	-0.0275584	0.0154016
-1.141	25%	Nepal	0.0008214	0.0075281	0.11	0.913	-0.0139334	0.0155762
-0.359	50%	Mozambique	0.0083467	0.0072416	1.15	0.249	-0.0058466	0.0225401
0.235	75%	Lesotho	0.0140629	0.0097221	1.45	0.148	-0.004992	0.0331178
0.638	90%	Vanuatu	0.017941	0.0120553	1.49	0.137	-0.005687	0.0415691
1.0053	95%	Kiribati	0.0214756	0.0143986	1.49	0.136	-0.0067451	0.0496964

Note: This table reports the marginal effects of log Net Official Development Assistance variable (NetODA) at different levels of HR factor. These results are based on the estimates of Table 7 column 8.

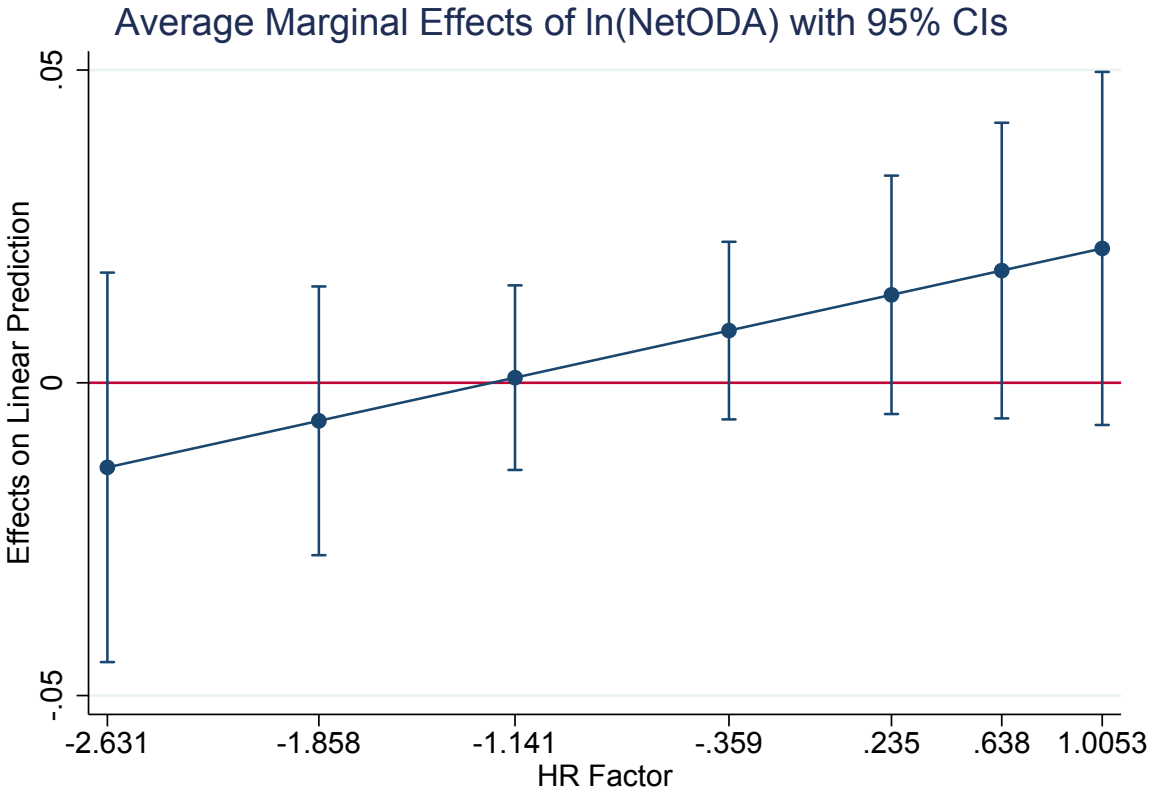


Figure 7: This figure reports the marginal effects of Net Official Development Assistance variable (NetODA) at different levels of HR Factor as for Table.

7 Concluding remarks

This paper has re-assessed the conditionality hypothesis, by including the potential conditionality upon non-economic governance indicators (human rights). Human rights provision is seen as underpinning better governance in aspects such as corruption, for which data may not yet be of comparable quality.

As part of this analysis, we set up a theoretical model of repression and corruption, where resources - including aid resources - are diverted to oligarchs' consumption in the presence of worse level of governance. We argue that, in low income countries with a poverty trap, the marginal diversion of aid is particularly likely to be high where repression is present. This is significant, particularly as the literature emphasizes that the main potential role for aid in promoting growth is precisely in those countries which are experiencing a poverty trap.

This leads us into an empirical investigation of the effect of aid on per capita GDP for least developed countries. Furthermore, to account for non-income dimensions of aid effectiveness, we introduce an aid-human rights interaction term, solving for potential endogeneity of aid variable and capturing the growth effect coming from the non income dimension.

The results strongly support Sen (2001)'s development as freedom hypothesis, as well as providing a strong, modified variant on Burnside and Dollar (2000)'s aid conditionality finding. While initial regressions indicate limited benefit from aid in terms of GDP growth, the interaction with measures of human rights makes our results more meaningful and significant, with remarkably consistent results across regressions, as other socioeconomic variables and even when conflict variables are introduced. Indeed, the robustness check in Section 6 confirm that, while economic policy variables are strong predictors of growth, human rights seem to be a better predictor of aid effectiveness.

We are not arguing that HR is necessarily the only indicator of good governance: indeed, as our scatterplots of aid and corruption show, indicators of good governance tend to be positively correlated. However, the paper does indicate that HR is a valid governance measure for these purposes, and that, given both its intrinsic value and the fact that good indicators of HR have now been developed, there is a strong case for making HR as one of the conditionality variables in allocating aid.

References

Acemoglu, D., Johnson, S., and Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5):1369–1401.

Arellano, M. and Bond, S. (1991). Some tests of specification for panel data: Monte carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2):277–297.

Arellano, M. and Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1):29–51.

Barro, R. J. (1990). Government spending in a simple model of endogeneous growth. *Journal of Political Economy*, pages S103–S125.

Barro, R. J. (2001). Human capital and growth. *The American Economic Review*, 91(2):12–17.

Becker, G. S., Murphy, K. M., and Tamura, R. (1994). Human capital, fertility, and economic growth. In *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education (3rd Edition)*, pages 323–350. The University of Chicago Press.

Blume, L. and Voigt, S. (2007). The Economic Effects of Human Rights. *Kyklos*, 60(4):509–538.

Blundell, R. and Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1):115–143.

Boone, P. (1996). Politics and the effectiveness of foreign aid. *European Economic Review*, 40(2):289–329.

Burnside, C. and Dollar, D. (2000). Aid, policies, and growth. *The American Economic Review*, pages 847–868.

Burnside, C. and Dollar, D. (2004). Aid, policies, and growth: reply. *The American Economic Review*, 94(3):781–784.

Carlin, W., Soskice, D., et al. (2005). Macroeconomics: imperfections, institutions, and policies. *OUP Catalogue*.

Carter, P. and Temple, J. R. W. (2017). Virtuous Circles and the Case for Aid. *IMF Economic Review*, 65(2):397–425.

Cerna, C. M. (1994). Universality of human rights and cultural diversity: implementation of human rights in different socio-cultural contexts. *Human Rights Quarterly*, 16(4):740–752.

Cingranelli, D. L. and Richards, D. L. (1999). Measuring the level, pattern, and sequence of government respect for physical integrity rights. *International Studies Quarterly*, 43(2):407–417.

Collier, P. (2008). *The bottom billion: Why the poorest countries are failing and what can be done about it*. Oxford University Press, USA.

Cooray, A., Dutta, N., and Mallick, S. (2017). The right to be free: is media freedom good news for women's rights? *Journal of Institutional Economics*, 13(02):327–355.

Dalgaard, C.-J. and Hansen, H. (2001). On aid, growth and good policies. *Journal of Development Studies*, 37(6):17–41.

Dalgaard, C.-J., Hansen, H., and Tarp, F. (2004). On the empirics of foreign aid and growth. *The Economic Journal*, 114(496):F191–F216.

Dehn, J. and Collier, P. (2001). Aid, shocks and growth. *Washington: World Bank Working Paper*, 2688.

Dollar, D. and Pritchett, L. (1998). Assessing aid: A world bank policy research report. *Washington DC*.

Doucouliagos, H. and Paldam, M. (2009). The aid effectiveness literature: the sad results of 40 years of research. *Journal of Economic Surveys*, 23(3):433–461.

Doucouliagos, H. and Paldam, M. (2010). Conditional aid effectiveness: A meta-study. *Journal of International Development*, 22(4):391–410.

Easterly, W., Levine, R., and Roodman, D. (2004). Aid, policies, and growth: Comment. *American Economic Review*, 94(3):774–780.

Edwards, T. H., Kernohan, D., Landman, T., and Nessa, A. (2018). Good neighbours matter: economic geography and the diffusion of human rights. *Spatial Economic Analysis*, pages 1–19.

Hansen, H. and Tarp, F. (2000). Aid effectiveness disputed. *Journal of International Development*, 12(3):375.

Hansen, H. and Tarp, F. (2001). Aid and growth regressions. *Journal of Development Economics*, 64(2):547–570.

Jabine, T. B. and Claude, R. P. (1992). *Human rights and statistics: getting the record straight*. University of Pennsylvania Press.

Landman, T. and Larizza, M. (2009). Inequality and human rights: who controls what, when, and how. *International Studies Quarterly*, 53(3):715–736.

Landman, T. and Schudel, C. J. W. (2007). Corruption and human rights: Empirical relationships and policy advice. *International Council on Human rights policy*.

Lewis, W. A. (1954). Economic development with unlimited supplies of labour. *The manchester school*, 22(2):139–191.

Mankiw, N. G., Romer, D., and Weil, D. N. (1992). A contribution to the empirics of economic growth. *The Quarterly Journal of Economics*, 107(2):407–437.

Mosley, P. (1987). Overseas aid: its defence and reform.

Mosley, P., Hudson, J., and Verschoor, A. (2004). Aid, poverty reduction and the 'new conditionality'. *The Economic Journal*, 114(496):F217–F243.

Rajan, R. G. and Subramanian, A. (2008). Aid and growth: What does the cross-country evidence really show? *The Review of Economics and Statistics*, 90(4):643–665.

Romer, D. (1986). A simple general equilibrium version of the baumol-tobin model. *The Quarterly Journal of Economics*, 101(4):663–685.

Roubini, N. and Sala-i Martin, X. (1995). A growth model of inflation, tax evasion, and financial repression. *Journal of Monetary Economics*, 35(2):275–301.

Sen, A. (2001). *Development as freedom*. Oxford Paperbacks.

Shapiro, C. and Stiglitz, J. E. (1984). Equilibrium unemployment as a worker discipline device. *The American Economic Review*, 74(3):433–444.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The quarterly journal of economics*, 70(1):65–94.

Appendix: growth effects of aid, in a bargaining model in the presence of a minimum workers' income constraint

We start with equation (13), denoting $\frac{v}{v-\bar{v}} = V$.

$$\frac{\partial N^{'}}{\partial \gamma} = \frac{\partial lnv}{\partial \gamma}(V+H) + \frac{H}{\gamma} = 0.$$

Now note that $\frac{\partial lnv}{\partial \gamma} = -\frac{2a}{1-2a}\frac{1}{1-\gamma}$; so that substituting in for this

$$\frac{\partial N^{'}}{\partial \gamma} = -\frac{2a}{1-2a}\frac{1}{1-\gamma}(V+H) + \frac{H}{\gamma} = 0. \tag{19}$$

Hence, after further simplification, the Nash bargaining outcome is

$$\hat{\gamma} = \frac{H-2aH}{H+2aV}. \tag{20}$$

Similarly for T, starting with equation (14)

$$\frac{\partial N^{'}}{\partial T} = \frac{\partial lnv}{\partial T}(V+H) + \frac{H}{T} = 0.$$

And since

$$\frac{\partial lnv}{\partial T} = \frac{1}{2a-1}\left[\frac{1}{1-T} - \frac{2a}{T}\right],$$

then

$$T = \frac{H+2aV}{2H+V+2aV}. \tag{21}$$

We are interested in the effects upon log of GDP of changing aid subsidy on investment, θ.

We start with equation (5).

Taking logs, and using Ω to consolidate constants and unchanging parameters, we derive

$$lnY = \Omega - \frac{2a}{1-2a}ln(1-\theta) + \frac{1}{1-2a}ln(1-T) + \frac{2a}{1-2a}lnT + \frac{2a}{1-2a}ln(1-\gamma). \tag{22}$$

Totally differentiating this, we obtain

$$\partial lnY = \frac{2a}{1-2a}\frac{\partial \theta}{(1-\theta)} - \frac{\frac{1}{1-T} + \left(\frac{2a}{T}\right)}{1-2a}\partial T - \frac{2a}{1-2a}\frac{1}{1-\gamma}\partial \gamma. \tag{23}$$

Note that when T and γ are exogenous (which is the case where V is constant, i.e. where the minimum income constraint is not binding),

$$\left(\frac{\partial lnY}{\partial \theta}\right)^{unconstrained} = \frac{2a}{1-2a}\frac{1}{(1-\theta)} > 0. \tag{24}$$

Hence Y and v are increasing with respect to the aid share, with the elasticity increasing with respect to the share of aid in the budget. Moreover, this is unaffected by H.

Now consider the indirect (feedback) channels. A rise in aid leads to a rise in Y (and an equiproportionate rise in v), but this leads to a rise in T and γ, both of which offset the GDP increase.

First consider

$$\hat{\gamma} = \frac{H-2aH}{H+2aV} \Longrightarrow \frac{\partial \hat{\gamma}}{\partial V} = -\frac{2a\left(1-2a\right)H}{\left(H+2aV\right)^2} < 0. \tag{25}$$

This is increasing with respect to H as long as $H > 2aV$.

in the case of T,

$$T = \frac{H+2aV}{2H+V+2aV} \Longrightarrow \frac{\partial \hat{T}}{\partial V} = \frac{V-(1-2a)H}{\left(2H+V+2aV\right)^2}. \tag{26}$$

We note that this latter term is likely to be negative if $V <(1-2a)H$. In this case, which is more likely with v small relative to $\bar{v}$ and with poor human rights (high H), we can definitely say that both T and γ will be increasing with respect to V, which will dampen the rise in lnY.