# Constitutions and the Growth Elasticity of Poverty

Maria Perrotta

IIES, Stockholm University

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### Abstract

Depending on the definitions, poverty concerns still up to half the world population. Increasing per capita income is generally associated with decreasing poverty rates, but this relation is affected by very many factors. The focus of this paper is on analytical examination of how the relation between growth and poverty can change with the institutional setting of the country, in particular with the constitution. The main result is that poverty is more reactive to growth under majoritarian electoral rule: have poor people become a powerful minority?

## 1 Introduction

The 2007 Human Development Report (HDR) from the United Nations Development Program notes that

> "There are still around 1 billion people living at the margins of survival on less than US$1 a day, with 2.6 billion—40 percent of the world's population—living on less than US$2 a day."

Depending on the definitions, poverty concerns still up to half the world population, and the progress made in the last years, after the Millenium Developmnet Goals declaration, is judged from barely marginal to moderately encouraging.

Although economic growth per se is a rather blunt tool for poverty reduction, increasing per capita income is generally associated with decreasing poverty rates. Recent research has tried to quantify more precisely the responsiveness of poverty to growth using the concept of growth elasticity of poverty: the percentage change in poverty associated with a 1 percent change in per capita income. (ADD REFERENCES) Many factors can affect how growth translates into poverty reduction, or the growth elasticity of poverty. Understanding more about this can help make the effort for poverty reduction more effective.

Fundamentally, the way growth translates into poverty reduction has to do with what shares of the income produced in the country accrue to different groups in the population, in other words, the country's distributional and inequality features; but more generally, since income distribution and inequality are not

given, it has to do also indirectly with everything that affects these features. The list here can be very long: the protection accorded to different stakeholders, the distribution by sectors of growth generation, the ethnic composition of the population are but few examples.

The focus of this paper is on analytical examination of how the relation between growth and poverty can change with the institutional setting of the country, more in particular with the constitutional arrangement. The constitution is the fundamental rule that aggregates voters preferences into political outcomes and eventually policy choices. A burgeoning literature on the economic effects of consitutions is building an ever expanding map from constitutional arrangements into empirically frequent and theoretically justified policy sets. This paper is an attempt to use this map to establish a link between a country's constitution and its growth elasticity of poverty.

The main result of the empirical analysis conducted here concerns the electoral rule: poverty is more responsive to growth in countries where a majority of the legislators are elected under plurality rule. Anticipating in short the discussion below, this result suggests that the type of incentives provided to the political leaders by this electoral rule, and the resulting types of policies make the efforts for poverty reduction more effective. Several additional results help understanding through which mechanisms this comes about.

The aim of this research is only descriptive, and no normative implication can be derived, such as the recommendation that all the developing countries that wish to alleviate the plague of poverty should adopt a majoritarian electoral rule: a regime change is a complicate process with many interactions and partly unforseable consequences. For example, the few instances of electoral rule change in the same data set are associated with increases in the poverty headcount.

The remainder of the paper is organized as follows: section 2 provides a brief overview of the theoretical predictions in terms of the links between constituions and policies or other political outcomes which are relevant in the present context, and discusses how the fight against poverty relates to them; section 3 describes the dataset and the empirical specification; section 4 presents the main results, related to the effect of constitutions, and other minor findings comparable to previous studies; section 5 deals with the robustness of the results; section 6 concludes.

# 2   Theoretical background

One important component of a country's institutional arrangement is the design of the constitution. There is by now a large literature on the economic effects of constitutions. While the intermediate link from constitutional design to political and institutional outcomes is generally left to the political scientists, the economic literature on the topic focuses mostly on the reduced form relation from constitutions to economic policies (in particular size and composition of public expenditure, fiscal policy, trade policy, regulation) and long-term economic outcomes (corruption, growth). A comprehensive overview is given in the works of Persson and Tabellini (**?**, 2003 and 2005).

The question asked in this paper is also of the reduced form type. In short, I ask: since a given constitution aggregates a society's preferences into policies and affects policymakers' incentives, will the sets of policies resulting from different constitutional settings affect differently a long-term outcome such as the extent to which economic growth benefits the poor?

First of all, the question arises whether democratic institutions per se, and their quality, play a role: are (better) democracies better at channelling growth towards poverty reduction goals? The literature on the effects of democracy and democratization is large and rather inconclusive. In particular, while a great deal of literature is available on the relationship between democracy and economic growth, surprisingly little is known about the relationship between democracy and poverty instead (**?**) (Sum up the discussion here).

**?**) claims that

> "The form of democracy, rather than democracy vs. non-democracy
> per se, may be one of the missing links between history, current policy
> and economic development".

I move on then to check if this claim holds true in this setting, and there is any effect on poverty reduction referable to the two most widely studied features of constitutional design: the form of government and the electoral rule. What should we expect in terms of poverty reduction outcomes from these constitutional features?

One first aspect regards the mapping from constitutions to the composition of expenditure. **?**) (PT) discuss the theoretical effect of constitutions, which are in essence different ways to aggregate conflicting interests into policies, relating to three different classes of interests that are at stake in different policy choices: the interests of the many (so called broad based programs or general interest policies); the interests of a group, variously defined (special interest policies, sometimes referred to as *pork barrel*); finally the interests of the political elite (corruption, rent seeking, agency issues in general). Most of the literature surveyed in PT, and also their own empirical investigation, predicts that one should expect less support (i.e. less spending) for broad based programs associated with presidential constituions. Two features of this form of government encourage the political leaders to resort rather to special interest policies: a more effective separation of powers and the absence of confidence requirement generate several institutional veto players, whom the leader has incentive to target with pork barrel in exchange for support (see, e.g., **?**)).

From a different perspective, other models relate the effectiveness of policies and political leadership to the constitutional features. In this respect, different features of the presidential constitution might pull in opposite directions: the already mentioned separation of power is argued to generate a status quo bias, for the difficulty to have reforms approved, and hence less effective policies (see **?**) and **?**)); a similar effect can be associated with the divided government possibility, when the president and the congressional majority don't belong to the same party, case which is ruled out in parliamentary regimes (see, e.g., **?**), about fiscal policy in the US); but on the other hand, the fixed term in office should reduce the policy

myopia and allow more room for long term interventions (a mechanism similar to **?**)). The prediction is hence not clear.

Coming to the electoral rule, in first approximation, the winner-take-all assumption associated with the plurality rule has the effect to focus the electoral competition on narrower constituencies. This should lead, similarly to what said about presidential constitutions, to a preference for special interest at the expenses of general interest policies. The point is made theoretically in **?**), and empirical evidence on the composition of spending under alternative electoral rules is provided in **?**)[1].

There are more details about the electoral rule. The first feature considered more closely in the literature (in some cases even used to define the electoral rule, as in **?**)) is the size of the electoral district, i.e. the number of representatives elected in each district. On the one hand, larger districts mean that the candidates or the politicians seeking election must appeal to a larger constituency: this pulls in the direction of general interest policies (check for more references). Moreover, a smaller district size might result in the selection of a lower quality candidate, or the support to a bad leader/representative, for ideological reasons, since the competition is stiffer. See for instance the model in **?**) (check for more references). A second feature whose effects have been considered in the literature is the ballot structure, and in particular the use of closed lists: in principle, the fact that the voters can express preferences on individuals rather than a list decided by the party should make a difference in terms of personal accountability of the candidate. While this has clear implications with respect to outcomes like corruption or electoral spending cycles (**?**), **?**)), there are no predictions in terms of general vs special interest policies. Stretching the intuition a bit, these predictions can be extended from accountability to a broader idea of *quality* of the candidate, so that the use of closed lists leads to the election of lower quality candidates.

Finally, the combination of the two constitutional features can deliver different effects. In particular, parliamentary regimes with majoritarian electoral rules are more likely to produce single-party majority governments (**?**), **?**)), which in turn can have an ambiguous effect: a good leadership can be, in this situation, more effective, since it is unrestrained; but the converse holds for an incompetent or corrupt leadership; on the other hand, this system might lead to larger swings in the ideological preferences of the government at election times compared to systems where coalition governments are more common (**?**), **?**)). The prediction is once more not clear.

Partly related to this last point, one last interesting hypothesis to check is the constitutional feature that **?**) call "insulation" of leaders, or the degree to which, once elected, the executive power can or can not be restrained. Aghion and coauthors proxy this concept with an array of variables, two of which are the very same definitions of form of government and electoral rule introduced above. The expected effect of these variables is subject to the same sort of ambiguity: unrestrained power is good if in good hands, and the other way around.

How does poverty reduction fit in this framework? A first set of predictions concerns the composition of spending and the choice of policies. It is not obvious

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[1]More recent quasi-experimental and experimental micro-evidence is provided in (**?**) and (**?**)

whether a poverty reduction program should be regarded as public good or rather as targeted redistribution. Poverty is a label that can describe quite a wide range of situations, and there is no strong consensus on a one-size-fits-all policy agenda. Even in a sample consisting only of developing countries, the definition can be very specific to the country setting: the situations of Latvia (poverty headcount 6%) and Sierra Leone (83%) are hardly comparable. A broad redistribution program can be more suitable in one case, where the other is better targeted by different instruments, like for instance the recently popular (?) conditional cash transfer programs. Arguing that poverty reduction is a broad rather than a special interest, according to the classification of policies mentioned above, changes completely the predictions. For this reason, I make two separate cases for the countries in which the spread of poverty is above or below some threshold, which I change for sensitivity checks. According to the classification of policies given above, in cases where poverty reduction can be considered indeed a broad based program, because poverty is so widespread in the population, it is expected to receive less support if the executive power has the characteristics associated with a presidential regime, or the legislators are elected under a majoritarian rule. The assumption needed for the next step is that less support to these policies shows up in lower poverty reduction corresponding to the same rate of growth, or a smaller elasticity of poverty to growth. But is it reasonable, if the poverty headcount is below a given threshold, to consider poverty reduction like pork barrel spending? Although they might be a minority, it is hard to describe the poor as a *powerful* minority. On the other hand, it is possible that targeting the poor is a relatively easy way to win elections, in some circumstances, maybe because they are geografically segregated, for instance, or because of the international pressure and support associated with poverty reduction. For instance, a poor country's government could gain reelection after gaining international recognition for some success on the front of poverty reduction. If this is the case, then one should expect a different elasticity in countries where the poverty headcount is lower than some threshold. Also, it could be possible to observe a different elasticity along with the recent increase in the international interest and focus on poverty.

With respect to quality of political leaders and policies, under the assumption that poverty reduction in a society requires deep reforms, effective policies and a consistent effort rather than isolated low impact interventions, the selection of lower quality politicians can be expected to be associated with a reduced effectiveness of policies and hence a smaller elasticity of poverty to growth. The prediction from the above discussion would be ambiguous for the presidential regime, for the combination of parliamentary and majoritarian and the single-party rule, and also for the "insulation" of the executive power, but clearer for what concerns district size and closed lists.

Now let's call upon the data to speak.

# 3  Data and specification

My sample consists of all the developing countries (at most 76) for which 2 or more observations are available for the dependent variable, the poverty headcount compiled by World Bank (WDI). The biggest sample for which all the variables in my model are available counts 146 country-year observations. A list of the country-year data points along with the main variables is in Appendix A.1. The observations are yearly and run from at most 1980 to 2004. During this period, I exploit 70 within country variations in the poverty headcount and income; the regional distribution is detailed in Table 1 below.

The poverty headcount, the fraction of the population living below the national poverty line, averages 38% in the sample, ranging from a low 6% (Latvia 2004) to a very high 83% (Sierra Leone 1989). Income per capita (at constant prices) varies also widely, from 112 USD (Burundi 1998) to 6056 USD (Mexico 2004).

In 66% of the observations, changes in poverty are negatively associated with changes in income, which suggests an average negative growth elasticity of poverty. This elasticity can be quite different though in different subsamples. One way to estimate it is through regressions of the form

$$\log p_{it} = \alpha_i + \eta \log y_{it} + \sum_{j=1}^{J} \gamma_j X_j + \sum_{j=1}^{J} \delta_j X_j * \log y_{it} + \sum_{k=1}^{6} \beta_k I(reg = k) * \log y_{it} + \varepsilon_{it}$$

where $p_{it}$ is the poverty headcount rate for country $i$ in year $t$; $\alpha_i$ is a country fixed effect; $y_{it}$ is income per capita for country $i$ in year $t$, so that $\eta$ is the average growth elasticity of poverty. In the set of controls $X_j$ I allow several groups of variables to have both a direct effect on poverty and also an effect on the elasticity, interacting them with the log income. These contestual effects include the constitutions, discussed above, but also other factors, introduced and discussed later on. A list of variables and sources is in Appendix A.2.

In some specifications, I also add interaction terms for 6 regions of the world, the WB geographic groups, so that each region is allowed to have a different elasticity. There is in fact no reason why the elasticity of poverty to growth should be the same everywhere, and previous literature has found support for this (?).

Table 1: Changes in poverty and income by region, 1980-2004

| Region | Changes in poverty | | Changes in income | | Total | Corr $< 0$ |
|---|---|---|---|---|---|---|
| | Up | Down | Up | Down | | |
| East Asia and Pacific | 3 | 8 | 9 | 2 | 11 | 10 |
| Europe and Central Asia | 7 | 10 | 14 | 3 | 17 | 13 |
| Latin America and Caribbean | 5 | 10 | 12 | 3 | 15 | 9 |
| Middle East and North Africa | 2 | 2 | 4 | 0 | 4 | 2 |
| South Asia | 2 | 4 | 6 | 0 | 6 | 4 |
| Sub-Saharan Africa | 6 | 11 | 12 | 5 | 17 | 8 |
| Total | | | | | 70 | 46 |

# 4 Results

## 4.1 The effect of constitutions

The sample includes both democratic and non democratic countries, so I can separate the effect of the form of democracy from the demcratic rule per se. As definition of democracy I use the PolityIV index, ranging between -10 (strongly autocratic) and 10 (strongly democratic), according to which 66% of the countries in the sample are democratic. 57% have a majoritarian electoral rule and 67% a presidential government[2]. 38% have both these features, and half of these are located in Sub-Saharan Africa.

Looking at Table 2, the PolityIV index (Democracy quality) does not show any effect, either directly on poverty or on the elasticity of poverty to income: poverty reduction, it seems, is yet one more outcome that democracy per se does *not* affect. As the triple interaction term (Democracy quality*Income*Democracy) shows, though, the quality of democracy does play a role in the subsample of democracies: there (column 3 and 4) the elasticity increases by 0.012 for each increase in the PolityIV rating. It is not a very sizeable effect. For instance, the average african country (the regional mean PolityIV rating is zero) would increase the responsiveness of poverty to income growth from -0.457 to -0.512 increasing the quality of democratic institutions by one standard deviation (going up to a rating of 5). Though small, the effect is very significant and quite stable accross the different specifications.

It is also worth noticing that, controlling for democratic institutions, the co-efficeint on income is reduced: as it is often the case, part of the effect attributed to income can in fact be traced to some of the many factors that are strongly correlated with income, among which the quality of institutions, rather than being a direct effect of income itself.

Column 2 and 4 in Table 2 include controls for the regional trends. The regional trends themselves are discussed later on. As for the effect of democracy, besides a slight reduction in the coefficent for Sub-Saharan Africa, where the autocracies are more abundant, the regional trends are unaffected by the inclusion of the controls related to democracy.

Coming to the constitutions, in Table 3, presidential regime does not show any effect. The effect is instead significant and negative if Presidential is interacted with a dummy for countries with a poverty rate lower than 15%, i.e. the elasticity is smaller, though by little, in presidential countries where poverty concerns more than 15% of the population. According to the classification of policies given above, this result suggests then that, in cases where poverty reduction can be considered indeed a broad based program, it receives less support if the executive power has

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[2]The classification of the constitutional rules is from DATAVINE/Harvard CID and the World Bank (**?**). The definition of Majoritarian refers to the use of prlurality rule for the majority of seats in the lower House. Other definitions in the literature, for example (**?**), classify a country as majoritarian if all the seats in the House are elected under plurality rule.

Table 2: The effect of democratic institutions

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Log income | -0.928 | -1.683 | -0.832 | -1.511 |
|  | (0.224)*** | (0.351)*** | (0.209)*** | (0.359)*** |
| Democracy quality | 0.024 | 0.048 | 0.004 | 0.025 |
|  | (0.046) | (0.039) | (0.045) | (0.042) |
| Democracy quality*Income | -0.003 | -0.007 | 0.008 | 0.004 |
|  | (0.008) | (0.006) | (0.008) | (0.008) |
| Democracy |  |  | -0.17 | -0.132 |
|  |  |  | (0.118) | (0.133) |
| Democracy quality*Income*Democracy |  |  | -0.012 | -0.012 |
|  |  |  | (0.005)** | (0.005)** |
| Controls for regions | NO | YES | NO | YES |
|  |  |  |  |  |
| Observations | 146 | 146 | 146 | 146 |
| Number of code | 76 | 76 | 76 | 76 |
| R-squared | 0.3 | 0.44 | 0.34 | 0.48 |

Dependent variable is the log poverty headcount. Robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

the characteristics associated with a presidential regime, and hence policies for poverty reduction are less effective. Notice also that this effect is only significant if controls for democracy are included (the same variables as in Table 2): the link between form of government and choice of policy goes through electoral incentives, which are absent in non-democracies, even though they might be formally classified as presidential regimes.

Moving on to Table 4 below, the coefficient on Majoritarian*Income is very significant in all the specifications, and varies between -.2 and -.35. This is the strongest and most stable of my results[3]: it means that poverty is more elastic to growth in countries with a plurality electoral rule[4].

As for the other details of the electoral rule, unfortunately I have too few observations for these variables to be able to check their effect directly, and I can't say much more than how they correlate with the plurality rule. To the extent to which the fight against poverty can be considered a broad based policy program, and also one that requires leadership skills, district magnitude should be positively associated with the success of this program. It does not contribute

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[3]I also included the variable in all the other specifications in the paper, and it is almost always significant and within similar range of values.

[4]As for the direct effect, the switch to a majoritarian electoral rule is associated, in the sample, with an increase of about 5.5 to 7.4 percentage points in the poverty headcount. Only 3 countries though change electoral rule in the sample: Macedonia 2003, Morocco 1998, Sierra Leone 1997.

Table 3: The effect of presidential constitution

|  | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Log income | -0.992 | -2.262 | -0.960 | -2.104 | -1.006 |
|  | (0.343)*** | (0.751)*** | (0.312)*** | (0.732)*** | (0.383)** |
| Presidential*Income | 0.118 | 0.686 | 0.235 | 0.730 | 0.361 |
|  | (0.462) | (0.659) | (0.452) | (0.646) | (0.514) |
| Poverty <15% |  |  |  |  | 0.126 |
|  |  |  |  |  | (0.152) |
| Presidential*Poverty <15% |  |  |  |  | -0.031 |
| *Income |  |  |  |  | (0.012)** |
|  |  |  |  |  |  |
| Controls for regions | NO | YES | NO | YES | NO |
| Controls for democracy | NO | NO | YES | YES | YES |
|  |  |  |  |  |  |
| Observations | 146 | 146 | 146 | 146 | 146 |
| Number of code | 76 | 76 | 76 | 76 | 76 |
| R-squared | 0.29 | 0.45 | 0.35 | 0.50 | 0.42 |

Dependent variable is the log poverty headcount. Robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

to explain the positive effect of Majoritarian on the elasticity, hence, since the district size is much smaller (average of 3 representatives per district against 21) in majoritarian countries in my sample: the negative correlation should pull the sign of Majoritarian in the opposite direction. Closed lists, instead, which by the above argument should be associated with lower quality candidates, are less commonly used in majoritarian countries, in my sample; this can hence be one of the factors explaining the positive effect of Majoritarian on the elasticity.

Including some controls, as shown in the last column of Table 4, it emerges that about half of the effect of Majoritarian on the growth elasticity comes from countries where the poverty headcount is less than 15% and from observations after year 2000, which is when the Millenium Declaration was signed. This last could proxy the recent increase in the international interest and focus on poverty[5]. In this specification, Majoritarian*Income is not even significant. It is possible that it is just not identified, given the large number of controls: if less controls are added, either the ones for democracy or the regional trends, or neither, the coefficient is still much smaller, but significant.

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[5]It could also be just a time effect: in fact, average income is increasing and average poverty headcount decreasing over the time span considered in the sample.

Table 4: The effect of plurality rule

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Log income | -0.836 | -1.586 | -1.376 | -1.145 |
|  | (0.219)*** | (0.377)*** | (0.375)** | (0.363)*** |
| Majoritarian | 1.772 | 1.443 | 2.083 | 0.819 |
|  | (0.554)*** | (0.569)** | (0.584)*** | (0.670) |
| Majoritarian*Income | -0.27 | -0.225 | -0.306 | -0.128 |
|  | (0.093)*** | (0.093)** | (0.092)*** | (0.098) |
| Poverty<15% |  |  |  | -0.172 |
|  |  |  |  | (0.059)*** |
| Year 2000 |  |  |  | -0.117 |
|  |  |  |  | (0.045)** |
| Controls for regions | NO | YES | YES | YES |
| Controls for democracy | NO | NO | YES | YES |
|  |  |  |  |  |
| Observations | 146 | 146 | 146 | 146 |
| Number of code | 76 | 76 | 76 | 76 |
| R-squared | 0.33 | 0.46 | 0.52 | 0.60 |

In Table 5, Column 3, I look at the combination of the two constitutional features. The sign of the interaction Majoritarian*Parliamentary*Income shows that in my sample the positive effect of Majoritarian is significantly reduced in parliamentary regimes. This suggests that there can be a negative effect of large electoral swings to put a drag on the poverty alleviating work in these countries, and that, in the rather common single party instances, the less desirable features dominate the potential positive effects.

In the last column, I add one more of the Aghion et al. "insulation" proxies, namely the index of executive constraints from the PolityIV dataset. This last has no significant effect per se, but it reduces somewhat the coefficients on the other two constitutional features: it makes perfect sense that part of the effect of the constitutions works through the way they restrict the powers of the leader, or fail to do so. To better check the validity of this hypothesis in the present context, I also interacted the degree of executive constraints with several measures or proxies of the quality and accountability of the leader: constraining the executive should, in fact, be expected to have a positive effect (here, an increase in the elasticity) if the leader is bad in some sense, and conversely it could potentially have a negative effect due to the hindrance on the work of a good leader. Nothing of this is visible in this sample, with the variables and the specification I chose; I decided hence to

Table 5: The "insulation" of the leader

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Log income | -0.844 | -1.952 | -1.898 | -1.823 |
|  | (0.304)*** | (0.760)** | (0.778)*** | (0.931)*** |
| Majoritarian | 2.025 | 2.041 | 2.648 | 1.679 |
|  | (0.545)*** | (0.558)*** | (0.658)*** | (0.697)** |
| Majoritarian*Income | -0.297 | -0.301 | -0.409 | -0.250 |
|  | (0.086)*** | (0.087)*** | (0.102)*** | (0.105)** |
| Presidential*Income | 0.171 | 0.705 | 0.694 | 0.624 |
|  | (0.435) | (0.658) | (0.669) | (0.649) |
| Majoritarian*Parliamentary |  |  | 0.045 |  |
| *Income |  |  | (0.017)** |  |
| Executive constraints |  |  |  | 0.163 |
|  |  |  |  | (0.319) |
| Executive constraints |  |  |  | -0.021 |
| *Income |  |  |  | (0.055) |
| Controls for regions | NO | YES | YES | YES |
| Controls for democracy | YES | YES | YES | YES |
|  |  |  |  |  |
| Observations | 146 | 146 | 146 | 146 |
| Number of code | 76 | 76 | 76 | 76 |
| R-squared | 0.39 | 0.53 | 0.48 | 0.54 |

not include it[6].

## 4.2    The regional trends

Table 6 above reports a summary of my results for the regional trends, comparing the coefficients obtained from the different models estimated. Column 1 shows that, comparing to the full sample average, the elasticity is much bigger in the excluded group, Europe and Central Asia, and significantly smaller in the other regions[7].The last column in Table 6 reports for comparison the elasticities estimated in **?)** (BB). The difference is due to three important factors. First, the sample: my sample goes up to 2004, including some new waves of household income surveys conducted after the BB paper, from which new observations on

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[6]I also experimented with the other variables from (**?**), namely an index of the separation of powers and an indicator for term limits, from the Database of Political Institutions. Since they reduce the sample, and are not significant, I did not include them. I interacted all of these "insulation" proxies with several ratings of the quality of policies and public administration from the CPIA, a measure of corruption, the diffusion of newspapers and also the PolityIV rate for autocracies. No effect was significant.

[7]The coefficient on Middle East and North Africa is in fact even bigger, but not significant.

Table 6: The elasticity of poverty to growth accross regions in different models

|  | (1) | (2) | (3) | BB |
|---|---|---|---|---|
| East Asia and Pacific | -0.75** | -0.68* | -1.61 | -1.00** |
| Europe and Central Asia / excl. group | -1.70** | -1.95** | -1.61*** | -1.14 |
| Latin America and Caribbean | 0.04*** | -0.22*** | 0.414*** | -0.73** |
| Middle East and North Africa | -1.70 | -1.95 | -1.61 | -0.72 |
| South Asia | -0.19*** | -0.279*** | -0.483* | -0.59** |
| Sub-Saharan Africa | -0.47** | -1.95 | -1.61 | -0.49** |
| Full sample | -0.92*** | | | -0.73** |

Notes: The stars indicate that the coefficient is significantly different from the
coefficient of the excluded group. Model (1) includes only the regions; model (2)
includes the constitutions; model (3) the value added in agriculture to GDP.
The last column reports for comparison the estimates from **?**). In
this column, the stars indicate that the coefficient is significantly different from zero.

the poverty headcount have been compiled. Second, the dependent variable: I use
the poverty headcount based on national poverty lines, while BB use the measure
based on the 1-$-a-day line (DEBATE). Finally, BB estimate separate regressions
for each region, and thus cannot include country fixed effects, due to the limited
number of observations. Moreover, this way they cannot establish if the regional
coefficients are significantly different from each other, but only if they are signifi-
cantly different from zero. I prefer the specification with interaction terms, which
allows me to use all the observations and significantly estimate the *difference* in
the elasticity accross regions.

What emerges from Table 6 is that, first of all, controlling for country specifc
fixed effects, the differences between regions are larger and more significant than
those estimated previously (compare the first and the last column); on the other
hand, part of these differences disappear once other factors are taken into ac-
count; in other words, some of the factors I consider explain part of the regional
differences in the response of poverty to income growth. In particular, the coeffi-
cient on Sub-Saharan Africa (SSA) becomes much smaller and insignificant when
controlling for the constitutions (column 2). In this case, there is a very strong
correlation: about half of the presidential and majoritarian countries in the sample
are in SSA, and most of the SSA countries are presidential and majoritarian. It
is hence possible that the regional effect on the elasticity is in fact due to the con-
stitutional features; in other words, the consitutions explain the african difference
in the growth elasticity of poverty. In column 3, (...)
Only Latin America and South Asia show a consistently different coefficient:
in these two regions, increases in income are associated either with much smaller

Table 7: The sectoral distribution of output generation

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Log income | -1.096 | -1.61 | -0.863 | -1.229 |
|  | (0.321)*** | (0.286)*** | (0.323)*** | (0.316)*** |
| Agriculture | -0.085 | -0.101 | -0.074 | -0.095 |
|  | (0.042)** | (0.049)** | (0.041)* | (0.045)** |
| Agriculture*Income | 0.015 | 0.018 | 0.014 | 0.017 |
|  | (0.007)** | (0.008)** | (0.007)* | (0.008)** |
| Majoritarian |  |  | 1.693 | 2.069 |
|  |  |  | (0.580)*** | (0.640)*** |
| Majoritarian*Income |  |  | -0.254 | -0.307 |
|  |  |  | (0.095)*** | (0.104)*** |
| Controls for regions | NO | YES | YES | YES |
| Controls for democracy | YES | YES | YES | YES |
|  |  |  |  |  |
| Observations | 146 | 146 | 146 | 146 |
| Number of code | 76 | 76 | 76 | 76 |
| R-squared | 0.38 | 0.49 | 0.46 | 0.59 |

decreases or even with increases in the poverty rate. Most notably, the elasticity in Latin America is positive in most specifications; this is related to features of the income distribution and inequality[8].

## 4.3 Other results

In Table 7 above, (NOT SURE IF I SHOULD INCLUDE THESE RESULTS)

# 5 Robustness checks

The fixed effect specification is rather strong, and one can argue that, once a country fixed effect is included, the constitutions are close to randomly assigned. What can I do as robustness checks?

-check wheter a similar pattern holds also in industrial countries: how fast did OECD countries with different constitutions reduce their poverty rates?

-check alternative definitions of pres (confidence requirement as in PT) and maj (district magnitude as in PT99)

-is endogeneity of growth to poverty an issue?

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[8]Including a control for inequality (Gini coefficient), the elasticity for Latin America becomes negative in some specifications. The control itself is though never significant, and doesn't change qualitatively the other results, but reduces significantly the sample size, so I don't include it. Moreover, the change in inequality is part of the mechanism that translates variations in per capita income to variations in poverty rate; hence holding it constant would be wrong.

# 6    Conclusions

# 7 Appendix A.1 - Sample

| Country | Year | Poverty | Income | Polity | Presidential | Majoritarian |
|---------|------|---------|--------|--------|--------------|--------------|
| Albania | 2002 | 25.4 | 1310.39 | 7 | 0 | 1 |
| Algeria | 1988 | 12.2 | 1833.91 | -9 | 1 | 1 |
| Armenia | 1999 | 55.05 | 582.28 | 5 | 1 | 1 |
| Armenia | 2001 | 50.9 | 683.59 | 5 | 1 | 1 |
| Azerbaijan | 1995 | 68.1 | 487.73 | -6 | 1 | 1 |
| Azerbaijan | 2001 | 49.6 | 714.4 | -7 | 1 | 1 |
| Bangladesh | 1996 | 51 | 296.5 | 6 | 0 | 1 |
| Bangladesh | 2000 | 49.8 | 337.77 | 6 | 0 | 1 |
| Benin | 1995 | 26.45 | 279.94 | 6 | 1 | 0 |
| Benin | 1999 | 29.02 | 304.07 | 6 | 1 | 0 |
| Bolivia | 1997 | 63.2 | 994.06 | 9 | 1 | 0 |
| Bolivia | 1999 | 62.7 | 1005.56 | 9 | 1 | 0 |
| Bolivia | 2002 | 65.2 | 1010.41 | 9 | 1 | 0 |
| Brazil | 1998 | 22 | 3643.61 | 8 | 1 | 0 |
| Brazil | 2003 | 21.5 | 3732.63 | 8 | 1 | 0 |
| Bulgaria | 1997 | 36 | 1351.73 | 8 | 0 | 0 |
| Bulgaria | 2001 | 12.8 | 1658.15 | 9 | 0 | 0 |
| Burkina.Faso | 1998 | 54.6 | 213.26 | -4 | 1 | 0 |
| Burkina.Faso | 2003 | 46.4 | 240.78 | 0 | 1 | 0 |
| Burundi | 1998 | 68 | 112.07 | -1 | 1 | 0 |
| Cambodia | 1994 | 47 | 217.88 | 1 | 0 | 0 |
| Cambodia | 1997 | 36.1 | 238.46 | -7 | 0 | 0 |

| Country | Year | Poverty | Income | Polity | Presidential | Majoritarian |
|---------|------|---------|--------|--------|--------------|--------------|
| Cambodia | 2004 | 35 | 365.98 | 2 | 0 | 0 |
| Cameroon | 1996 | 53.3 | 581.91 | -4 | 1 | 1 |
| Cameroon | 2001 | 40.2 | 648.39 | -4 | 1 | 1 |
| Chile | 1996 | 19.9 | 4542.83 | 8 | 1 | 1 |
| Chile | 1998 | 17 | 4862.43 | 8 | 1 | 1 |
| Colombia | 1995 | 60 | 2092.11 | 7 | 1 | 0 |
| Colombia | 1999 | 64 | 1985.11 | 7 | 1 | 0 |
| Costa.Rica | 1992 | 22 | 3319.62 | 10 | 1 | 0 |
| Costa.Rica | 2004 | 23.9 | 4327.32 | 10 | 1 | 0 |
| Dominican.Republic | 2000 | 27.7 | 2261.24 | 8 | 1 | 0 |
| Dominican.Republic | 2004 | 42.2 | 2295.84 | 8 | 1 | 0 |
| Ecuador | 1995 | 34 | 1334.69 | 9 | 1 | 0 |
| Ecuador | 1998 | 46 | 1382.99 | 9 | 1 | 0 |
| Egypt,.Arab.Rep. | 1996 | 22.9 | 1317.25 | -6 | 0 | 1 |
| Egypt,.Arab.Rep. | 2000 | 16.7 | 1500.69 | -6 | 0 | 1 |
| El.Salvador | 1995 | 50.6 | 2006.24 | 7 | 1 | 1 |
| El.Salvador | 2002 | 37.2 | 2138.66 | 7 | 1 | 1 |
| Ethiopia | 1996 | 45.5 | 121.39 | 1 | 0 | 1 |
| Ethiopia | 2000 | 44.2 | 120.11 | 1 | 0 | 1 |
| Gambia,.The | 1992 | 64 | 312.78 | 8 | 1 | 1 |
| Gambia,.The | 1998 | 57.6 | 290.21 | -5 | 1 | 1 |
| Gambia,.The | 2003 | 61.3 | 302.35 | -5 | 1 | 1 |

| Country | Year | Poverty | Income | Polity | Presidential | Majoritarian |
|---|---|---|---|---|---|---|
| Georgia | 2002 | 52.1 | 732.63 | 5 | 1 | 0 |
| Georgia | 2003 | 54.5 | 822.84 | 5 | 1 | 0 |
| Ghana | 1992 | 50 | 216.68 | -1 | 1 | 1 |
| Ghana | 1999 | 39.5 | 243.8 | 2 | 1 | 1 |
| Guatemala | 1989 | 57.9 | 1435.95 | 3 | 1 | 1 |
| Guatemala | 2000 | 56.2 | 1717.86 | 8 | 1 | 1 |
| Guinea | 1994 | 40 | 341.28 | -5 | 1 | 1 |
| Honduras | 1999 | 52.5 | 927.62 | 7 | 1 | 0 |
| Honduras | 2004 | 50.7 | 1017.89 | 7 | 1 | 0 |
| Hungary | 1993 | 14.5 | 3638.35 | 10 | 0 | 0 |
| Hungary | 1997 | 17.3 | 4054.81 | 10 | 0 | 0 |
| India | 1994 | 36 | 351.85 | 8 | 0 | 1 |
| India | 2000 | 28.6 | 452.98 | 9 | 0 | 1 |
| Indonesia | 1996 | 17.5 | 877.76 | -7 | 0 | 0 |
| Indonesia | 1999 | 27.1 | 772.63 | 6 | 0 | 0 |
| Indonesia | 2004 | 16.7 | 903.98 | 8 | 0 | 0 |
| Jamaica | 1995 | 27.5 | 3240.63 | 9 | 0 | 1 |
| Jamaica | 2000 | 18.7 | 3100.06 | 9 | 0 | 1 |
| Jordan | 1997 | 21.3 | 1709.6 | -2 | 1 | 1 |
| Jordan | 2002 | 14.2 | 1870.86 | -2 | 1 | 1 |
| Kazakhstan | 1996 | 34.6 | 1043.73 | -4 | 1 | 1 |
| Kazakhstan | 2001 | 17.6 | 1397.29 | -4 | 1 | 1 |

| Country | Year | Poverty | Income | Polity | Presidential | Majoritarian |
|---------|------|---------|--------|--------|--------------|--------------|
| Kazakhstan | 2002 | 15.4 | 1534.16 | -6 | 1 | 1 |
| Kenya | 1994 | 40 | 411.34 | -5 | 1 | 1 |
| Kenya | 1997 | 52 | 413.45 | -2 | 1 | 1 |
| Kyrgyz.Republic | 2001 | 47.6 | 291.16 | -3 | 1 | 0 |
| Kyrgyz.Republic | 2003 | 49.9 | 306.4 | -3 | 1 | 0 |
| Lao.PDR | 1993 | 45 | 249.78 | -7 | 0 | 1 |
| Lao.PDR | 1998 | 38.6 | 304.21 | -7 | 0 | 1 |
| Lao.PDR | 2003 | 33 | 375.94 | -7 | 0 | 1 |
| Latvia | 2002 | 7.5 | 3854.11 | 8 | 0 | 0 |
| Latvia | 2004 | 5.9 | 4538.9 | 8 | 0 | 0 |
| Lesotho | 1993 | 49.2 | 406.08 | 8 | 1 | 1 |
| Macedonia,.FYR | 2002 | 21.4 | 1708.47 | 9 | 0 | 1 |
| Macedonia,.FYR | 2003 | 21.7 | 1752.47 | 9 | 0 | 0 |
| Madagascar | 1997 | 73.3 | 229.78 | 8 | 1 | 1 |
| Madagascar | 1999 | 71.3 | 235.48 | 7 | 1 | 1 |
| Malawi | 1991 | 54 | 139.74 | -9 | 1 | 1 |
| Malawi | 1998 | 65.3 | 152.25 | 6 | 1 | 1 |
| Malaysia | 1989 | 15.5 | 2368.93 | 4 | 0 | 1 |
| Mali | 1998 | 63.8 | 232.42 | 6 | 1 | 1 |
| Mauritania | 1996 | 50 | 440.9 | -6 | 1 | 1 |
| Mauritania | 2000 | 46.3 | 421.32 | -6 | 1 | 1 |
| Mexico | 2000 | 24.2 | 5934.98 | 8 | 1 | 1 |

| Country | Year | Poverty | Income | Polity | Presidential | Majoritarian |
|---------|------|---------|--------|--------|--------------|--------------|
| Mexico | 2002 | 20.3 | 5852.99 | 8 | 1 | 1 |
| Mexico | 2004 | 17.6 | 6055.92 | 8 | 1 | 1 |
| Moldova | 2001 | 62.4 | 334.3 | 8 | 0 | 0 |
| Moldova | 2002 | 48.5 | 365.42 | 8 | 0 | 0 |
| Mongolia | 1995 | 36.3 | 418.72 | 9 | 1 | 1 |
| Mongolia | 1998 | 35.6 | 445.57 | 10 | 1 | 1 |
| Mongolia | 2002 | 36.1 | 479.65 | 10 | 1 | 1 |
| Morocco | 1991 | 13.1 | 1270.85 | -8 | 1 | 1 |
| Morocco | 1999 | 19 | 1296.23 | -6 | 1 | 0 |
| Mozambique | 1997 | 69.4 | 207.9 | 6 | 1 | 0 |
| Mozambique | 2003 | 54.1 | 279.71 | 6 | 1 | 0 |
| Nepal | 1996 | 41.76 | 205.85 | 5 | 0 | 1 |
| Nepal | 2004 | 30.9 | 238.1 | -6 | 0 | 1 |
| Nicaragua | 1998 | 47.9 | 714.58 | 8 | 1 | 0 |
| Niger | 1993 | 63 | 169.28 | 8 | 0 | 0 |
| Pakistan | 1993 | 28.6 | 496.89 | 8 | 0 | 1 |
| Pakistan | 1999 | 32.6 | 526.23 | -6 | 0 | 1 |
| Panama | 1997 | 37.3 | 3647.32 | 9 | 1 | 1 |
| Paraguay | 1990 | 20.5 | 1405.05 | 2 | 1 | 0 |
| Peru | 2001 | 54.3 | 2054.35 | 9 | 1 | 0 |
| Peru | 2004 | 53.1 | 2277.31 | 9 | 1 | 0 |
| Philippines | 1994 | 32.1 | 891.18 | 8 | 1 | 1 |

| Country | Year | Poverty | Income | Polity | Presidential | Majoritarian |
|---|---|---|---|---|---|---|
| Philippines | 1997 | 25.1 | 973.55 | 8 | 1 | 1 |
| Poland | 1993 | 23.8 | 3040.68 | 8 | 1 | 0 |
| Poland | 1996 | 14.6 | 3621.29 | 9 | 1 | 0 |
| Romania | 1994 | 21.5 | 1621.72 | 5 | 0 | 0 |
| Romania | 1995 | 25.4 | 1741.66 | 5 | 0 | 0 |
| Russian.Federation | 1994 | 30.9 | 1685.85 | 4 | 1 | 0 |
| Russian.Federation | 1998 | 31.4 | 1510.54 | 4 | 1 | 0 |
| Russian.Federation | 2002 | 19.6 | 1967.52 | 7 | 1 | 0 |
| Senegal | 1992 | 33.4 | 430.6 | -1 | 1 | 0 |
| Sierra.Leone | 1989 | 82.8 | 246.09 | -7 | 1 | 1 |
| Sierra.Leone | 2004 | 70.2 | 207.79 | 5 | 1 | 0 |
| Sri.Lanka | 1991 | 20 | 595 | 5 | 1 | 0 |
| Sri.Lanka | 1996 | 25 | 723.14 | 5 | 1 | 0 |
| Sri.Lanka | 2002 | 22.7 | 879.46 | 6 | 1 | 0 |
| Tajikistan | 1999 | 74.9 | 148.42 | -1 | 1 | 1 |
| Tanzania | 1991 | 38.6 | 263.52 | -7 | 1 | 1 |
| Tanzania | 2001 | 35.7 | 277.89 | 2 | 1 | 1 |
| Thailand | 1994 | 9.8 | 1931.47 | 9 | 0 | 1 |
| Thailand | 1998 | 13.6 | 1886.01 | 9 | 0 | 1 |
| Tunisia | 1990 | 7.4 | 1500.64 | -5 | 1 | 1 |
| Tunisia | 1995 | 7.6 | 1651.39 | -3 | 1 | 1 |
| Turkey | 1994 | 28.3 | 2533.49 | 8 | 0 | 0 |

| Country | Year | Poverty | Income | Polity | Presidential | Majoritarian |
|---|---|---|---|---|---|---|
| Turkey | 2002 | 27 | 2864.62 | 7 | 0 | 0 |
| Uganda | 2000 | 33.8 | 240.03 | -4 | 1 | 1 |
| Uganda | 2003 | 37.7 | 255.35 | -4 | 1 | 1 |
| Ukraine | 2000 | 31.5 | 635.71 | 6 | 1 | 0 |
| Ukraine | 2003 | 19.5 | 823.22 | 6 | 1 | 0 |
| Uzbekistan | 2000 | 27.5 | 558.23 | -9 | 1 | 1 |
| Venezuela,.RB | 1989 | 31.3 | 4637.39 | 9 | 1 | 0 |
| Vietnam | 1998 | 37.4 | 364.1 | -7 | 0 | 1 |
| Vietnam | 2002 | 28.9 | 447.54 | -7 | 0 | 1 |
| Yemen | 1998 | 41.8 | 513.4 | -2 | 0 | 1 |
| Zambia | 1998 | 72.9 | 306.21 | 1 | 1 | 1 |
| Zambia | 2004 | 68 | 344.79 | 5 | 1 | 1 |
| Zimbabwe | 1991 | 25.8 | 659.07 | -6 | 0 | 1 |
| Zimbabwe | 1996 | 34.9 | 657.32 | -6 | 0 | 1 |

# 8 Appendix A.2

## Variables definition and source

**Poverty**: Poverty headcount, the fraction of the population living below the national poverty line from World Development Indicators

**Income**: Per capita GDP in constant 2000 USD from World Development Indicators

**Democracy quality**: PolityIV from the Polity IV data set. From -10 = strongly autocratic to 10 = strongly democratic

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