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INSTITUTIONS, FAMINE AND INEQUALITY

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Institutions, Famine and Inequality

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Abstract

In this paper we analyze whether and which political institutions are important for famine prevention and for keeping the levels of inequality low. While famines are sudden crises hitting a country, inequality is a structural problem. As a consequence, the institutions needed might be very different. The econometric exercises realized on a group of emerging and developing countries confirm the validity of Amartya Sen's "democracy prevents famine" argument, while democracy is not a significant determinant of income inequality. These results are in line with previous ones, suggesting an unclear role of democratic institutions in facing other structural problems, such as hunger and poverty.

Moreover, two main institutional indicators, computed by the World Bank, "control of corruption" and "government effectiveness" are negatively correlated with famine mortality, suggesting that the policy environment, the level of bureaucracy, governmental capacity to take decisions and implement them in a short period are relevant factors for reducing famine mortality. In contrast, political stability explains better income inequality in our sample of countries. Social peace and cohesion are deterrent for inequality, but the direction of the relationship should be investigated further.

1. INTRODUCTION

The paper engages in the broad debate on (political) institutions and development. Institutions are considered here to consist of the rules and social norms that shape and affect agents' behaviour, so structuring social interaction (Knight, 1992). There have been an increasing number of investigations into the causal relationship between

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institutions and economic growth both from a theoretical and empirical point of view (North and Thomas, 1981; Knack and Keefer, 1995; Rodrik, 1999). Most of these show that institutions are key determinants of growth, though the estimates are not always reliable due to methodological limitations (Acemoglu et al., 2001). Within this field of studies many authors have tried to assess whether democracy, which plays a central role in this paper, affects economic growth, but the evidence is mixed (Sirowy and Inkeles, 1990; Przeworski and Limongi, 1993; Campos, 1994; Bardhan, 1999).

This paper specifically conceptualizes development as human development, i.e., "a process of enlargement of human choices" (UNDP, 1990), and within this framework, economic growth is conceived as one of the means to foster human development. It considers primarily social dimensions, such as health and education, as constitutive elements of development (UNDP, 1990; Sen, 1999). Some empirical works have tried to analyze the effects of political institutions on human development (Kornai et. al., 2004; Bardhan, 2005). Bardhan has suggested that some non-income dimensions of development are better explained by a particular institutional index related to participatory rights and democratic accountability, than by property rights institutions. Finally, authors like Sen (1999, 2003b) have pointed to the role of democracy, both intrinsic and instrumental for human development. Democracy is strictly related to the enlargement of individual choices, but at the same time it can also influence other development dimensions.

Within the debate on institutions and human development, the present paper concentrates specifically on institutions and famines on the one hand, and on institutions and inequality on the other. The presence of famines and of high levels of inequality is a symptom of a lower development level as well as a constraint to future development. The difference between these two phenomena, which makes this study more original and interesting, is that while inequality is a structural problem, i.e. a

problem that persists in a society from one year to another without massive changes, famine is a phenomenon that hits a country suddenly, causing widespread hunger and starvation. Therefore, the institutions needed in each case might be very different.

We argue that institutions are crucial factors, capable of both preventing famine and determining levels of inequality in two ways. First, institutions perceived as sets of social norms, have an impact on the levels of tolerance of inequality, disrespect and hostility towards famine within the society. Second, they are bearers of values that may affect policymaking decisions, and therefore can shape social policies, income distribution, solidarity measures and pro-poor policies and in this way therefore go some way towards preventing famine.

In more detail, the objective of this paper is twofold. First, it aims to investigate the determinants of famine mortality, focusing on the effect of political institutions. Though the analysis concentrates for the most part on democratic institutions, with the analysis of the so-called "democracy prevents famines" hypothesis developed by the economist Amartya Sen, other institutional factors such as political stability and control of corruption are also brought into consideration. The following empirical analysis is carried out exclusively on a sample panel of low-income and emerging countries, since nowadays these are the main victims of famine.

The second aim is to identify and explore the main factors which would allow or facilitate better income distribution. One can observe that, in the best case scenario, emerging economies experienced a process of economic growth without a corresponding reduction in inequality. Inequality is reduced only when appropriate institutions and policies are introduced. We assume that institutional policies and particular socio-economic variables are key factors in managing social conflicts and in keeping inequality low during any process of economic growth and institutional change. Many countries considered in the sample, in fact, are experiencing both fast

economic growth and institutional change. In particular, education and political stability seem to be key variables in mitigating and preventing inequality. Education gives people opportunities and a wider range of capabilities, allowing both social improvements and an increase in skills which could lead to further income opportunities. Similar argument concerns political stability: a country enjoying a stable political situation, without troubles, is probably more inclined to distribute collective resources in a better way. However, political stability should be accompanied by democracy and pluralism, otherwise it could mean only keeping the status quo in which political power and economic resources are already concentrated. In order to test the validity of such assumptions, cross-country regressions will be employed on a sample of 50 emerging and developing economies, and these two variables, education and political stability, will be regressed against the Gini coefficient.

The paper is organised as follows: section 2 discusses the relationship between institutions and famine; section 3 engages with the debate on institutions and (income) inequality; finally, section 4 draws some conclusions. Both sections 2 and 3 initially contain a review of the relevant literature and then present the results of the quantitative analyses.

2. INSTITUTIONS AND FAMINES

2.1 Definition of, and approaches, to famine

The concept of famine is a very complex and multi-faceted one. As argued by de Waal (2000), it is impossible to define it properly because it is a multidisciplinary concept. Therefore, we might define it according to the main outcomes. In this sense, a famine is a phenomenon involving "acute starvation and a sharp increase of mortality", distinct from chronic hunger, which involves "sustained nutritional deprivation on a persistent basis" (Dreze and Sen, 1989, p. 7). In a more comprehensive way, de Waal

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(2000) identifies four major outcomes of a famine: 1. hunger, 2. impoverishment, 3. social breakdown, and 4. mortality.

The definition of famine is not independent of the approach followed in order to study it. For long time the debate on hunger and famine has been dominated by the thought of Thomas Malthus (1798), who focused on two key variables: food availability and population. Given the fact that the growth rate of population is much higher than that of food production, he argued that the future lack of enough food per capita would cause famines and starvation, and concluded that famine be viewed as a sharp decline in food availability in a country or region.

It was only at the beginning of 1980s that Amartya Sen's *entitlement approach* contributed to challenging this perspective, drawing attention to access to food. "The entitlement approach concentrates on each person's entitlements to commodity bundles including food, and views starvation as resulting from a failure to be entitled to any bundle with enough food" (Sen, 1981, p. 434). Entitlements depend mainly on two elements: i) personal endowments, which are the resources held by a person such as house, work and land; ii) the set of commodities accessible to the person through trade and production, i.e. the "exchange entitlement mapping" (Sen, 1981, p. 435). Famine can be the consequence of a decline of endowments or a decline in the exchange entitlement mapping; for instance, a sharp reduction in the price of the commodity produced reduces that person's capacity to buy food.

The validity of the above theoretical framework was tested in three major famines: Bengal (1943), the Wollo Province of Ethiopia (1973), and Bangladesh (1974) (Sen, 1981). The main finding is that in none of the three countries was there a decline in available food during the year of the crisis. This demonstrates that famines cannot be understood by simply focusing on per-capita food availability.

The entitlement approach has been very influential in addressing new famines. It provided empirical evidence that famines *can* occur even without any decline in food availability, that ultimately we should look at the available means of access to food, and, finally, that we need to analyze the conditions of different social groups. Quoting Sen (1981, p. 434), "starvation is a matter of some people not *having* enough food to eat and not a matter of there *being* not enough food to eat".

2.2 The "protective" role of democratic institutions

In the past there was a "fatalistic" attitude towards famines because they were believed to be "caused" by man-made or natural disasters such as droughts and floods, which, in turn, reduce food production. The entitlement approach, by shifting attention to socio-economic factors and breaking down the analysis by groups, has contributed to the identification of new determinants of famines, recognizing a much wider role of the state and other agents. As highlighted very effectively by Devereux (2000, p. 27), "famines occur because they are not prevented: they are allowed to happen". The central focus of the present sub-section is on "who" (which institutions? which organizations?) should intervene and "why" (what are the incentives?): the "how" question (which policies?) will be discussed but only briefly.

Amartya Sen (1983, 1999) developed the so-called "democracy prevents famines" argument, based on the idea that democratic institutions activate anti-famine mechanisms. The first key characteristic of a democracy is the presence of a multi-party system with periodic electoral turns. In the face of an ongoing crisis, opposition parties are likely to highlight the bad effects of governmental policies and to challenge the overall economic policy. In this situation, a democratically elected government is likely to intervene for *political economy* reasons at the very least. Even assuming that governments are self-interested agents, which only act for the purpose of being re-

elected, they cannot allow a large part of the population to die or starve. This would be at the expense of their probability of winning the next elections.

The second feature of a democracy is a free and independent media. While the extent of freedom of expression might depend on many other factors, which vary from country to country, a broader independency of the media should be an intrinsic element of a genuine democracy. When a disaster occurs, a free media plays a crucial "informative" role because it provides information on the symptoms of the crisis both to individuals and to political parties. Furthermore, news media can put direct pressure on governments and other actors in charge of taking action. A dynamic journalism, detached in any way from the political sphere, is able to raise awareness of the situation, acting as early warning system, to openly criticize the work of the government and, finally, to demand an immediate intervention.

The third intrinsic element of a well-functioning democracy is the presence of a vibrant civil society. This includes people gathering and mobilizing in order to protest against the current conditions and exercise their "voice". In addition, in a genuine democracy, non-governmental organizations (NGOs), grass-roots organizations and other volunteering associations play a number of roles: i) an "informative" one because they usually work with the poor, who are those usually hit by famine; ii) they can supply goods and services to reduce the effects of the crisis; iii) as active organizations, they should be able to put pressure on political parties and be intermediaries between the poor and the formal institutions. While a dynamic civil society is not exclusive to democracies, we believe that it can freely exercise all its roles only in this political environment.

Several scholars have stressed the potential role of democracy in famine prevention. Using the words of Osmani (2007, p. 10), "two attributes of democracy are at work here – viz., the scope for open debate as an accountability-demanding

mechanism and the presence of election as an accountability-enforcing mechanism". Similarly, Bardhan (1999, p. 102) argues that "Democracy helps development through the accountability mechanisms it installs for limiting the abuse of executive power, and provides a system of periodic punishments for undesirable government interventions in the economy and rewards for desirable interventions [...] Accountability mechanisms are particularly important in averting disasters". As a consequence, a famine is the result of an "institutional failure".

Both cross-country evidence and evidence based on looking at any one single country before and after a change in political system have been shown to support the idea that "democracy prevents famines". Comparisons between Zimbabwe and Botswana on the one hand, and Sudan and Ethiopia, on the other, in the period 1979-1984, fall into the first category of evidence. During this period, many disasters caused a decline in food production by 38% and 17% respectively in Zimbabwe and Botswana and by "only" 11% and 12% in Sudan and Ethiopia. Though the scale of agricultural disasters was much higher in the first group of countries, famine occurred only in the latter group because of the lack of political incentives for action (Sen, 1999).

China and India, traditionally put in the same cluster because of their (large) size, population density, geographical location, and recent transition to market economy are compared in along the same lines (Sen, 1999). While China at the beginning of the 1960s was still ineffective in preventing famines and during 1958-1961 actually experienced the most dramatic famine in the contemporary world, India had managed to avoid the occurrence of famines since the 1947 transition to democracy. The authoritarian regime in China did not allow for an adequate flow of information around the country and did not make the government accountable towards its citizens. With reference to Ethiopia and China, D'Souza (1990, p. 373) argues that "the absence of democracy, the lack of independent media, the prevalence of draconian censorship

resulting in a culture of fear - all these played a pivotal and disastrous role in the famines."

Finally, the inter-temporal comparison of India provides additional support for the "protective" role of democracy. Both before and after 1947, the country experienced significant reduction in food availability. However, after the Great Bengal famine of 1943, no further famine was registered. Investigative journalism and an active opposition party always imposed early intervention on the government so that the natural disasters did not move inevitably into a famine.

Ram (1995) offers one of the few in-depth analyses with respect to the historical influence of the media in India. Since the end of the 19th century there was already an independent press, which provided relevant information during emergencies such as the 1918 food crisis. In this situation, it delivered timely and numerous reports, which generated protests around the country. However, the press was not "listened to" by the national government, which could and did hide the gravity of the crisis and suppress all protests. This happened because the independent press was marginal and the "nationalist" press protected the government, and because of the lack of the reinforcing mechanisms of a democracy. A free and independent press was crucial for famine prevention after 1947.

Finally, with reference to the dramatic droughts hitting the Indian state of Maharashtra in 1960-1963, Dreze (1995) identifies three factors that played a substantial role in avoiding a disaster: the Famine Codes, established at the end of the 19th century, the "public pressure from political parties, the media, voluntary agencies" (Dreze, 1995, p. 155), and a well-planned intervention.[1] The Famine Codes offered important guidelines for the implementation of adequate policies, but, without the

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[1] This was based on restoring the purchasing power of the main victims through public employment.

mechanisms ensured by democratic institutions, the government would probably have ignored them, as often happened in the pre-democracy period.

As a conclusion to this large reflection, Sen argued that "there has never been a famine in a functioning multiparty democracy" (Sen, 1999, p. 178).

2.3 Critiques and counter-critiques

The idea that democracy plays an essential role in preventing famines has received some critiques, which challenge the previous evidence and the causal mechanisms that are assumed to underlie the relationship between democracy and lack of famines.

Among others, de Wall (2000), Brass (1986), Myhrvold (2003), and Rubin (2009b) argue that there was indeed a famine in the Indian state of Bihar in 1966-1967. Myhrvold (2003) also points out that following Sen's own definition of famine, the crisis that occurred in Bihar might well be labelled "famine". This would undermine the validity of the statement that no democracy has experienced a famine as well as the identification of India as a fully successful case of famine prevention after the transition to a democratic regime. With respect to the case of Bihar, Myhrvold (2003) stresses that the Indian media, although free and independent, did not provide reliable information, while other commentators such as Brass (1986) identify the democratic system as one possible cause of the famine. The first effects of the crisis were visible just before the elections and the ruling party had a political disincentive to recognize the famine. What drives the actions of different agents, according to Brass, is self interest, and so there could be egoistic reasons in democratic contexts also that could lead a government not to declare, and therefore not to intervene ahead of a famine.

There are also other controversial cases of possible famines in seemingly democratic countries. Among these, de Waal (1989, 2000) focuses on Bangladesh in 1974, Sudan in 1986-1988, and Ireland in 1945-1949. However, as also stressed by the

author, these cases are exceptional because Bangladesh "was democratic and liberal in name only", and South Sudan and Ireland were not considered as *parts* of Sudan and United Kingdom respectively. More recently, Rubin (2008b, 2009a, 2009b) has argued that Malawi and Niger experienced famines in 2002 and 2005 respectively though they were defined as democratic countries by several commentators. Following the line of thought of Devereux and Tiba (2007), Rubin (2008b) indicates the fragility of the state and its dependence on international assistance as the main causes of the famine in Malawi. However, the denial of the existence of the famine and the general inactivity of the government were responsible for the famine in Niger in 2005 (Rubin, 2009a).

The above critiques focus on possible exceptions to Sen's argument according to which "there has never been a famine in a functioning multiparty democracy". Many of these controversies are around the definition of famine and democracy, and the estimates of mortality rate and calorie intakes. While these debates are still open, we tend to believe that there are cases in which Sen's statement was violated. However, the empirical evidence presented in this sub-section does not undermine the validity of the broad "democracy prevents famine" argument.[2] It helps in identifying possible exceptions in which a fairly democratic country did not succeed in preventing famines.

The points raised by these authors also help in moving away from a narrow definition of democracy as "electoral democracy" and in going beyond a simple democracy/autocracy dichotomy. In addition to an analysis of "democratic institutions", there is a need to examine how these institutions are "used" (defined as "democratic practices" by Dreze and Sen, 2002) within a country. While the former are institutional arrangements that constitute the environment in which "democratic

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[2] Most of these authors explicitly recognize that their critiques do not touch the core of Sen's view (e.g., de Waal, 2000).

ideals"[3] can be pushed forward, "democratic practices" depend "on the extent of political participation, the awareness of the public […] and popular organizations" (Dreze and Sen, 2002, p. 1). This way, we can move towards an idea of democracy as "government by discussion" (Buchanan, 1954; Sen, 2003b).

The critiques addressed by Brass (1986), Rubin (2009b), Plümper and Neumayer (2009) challenge the fundamentals of Sen's thought: democratic countries might even have lower incentives to respond to crises than authoritarian ones. The reason lies in the possible "political blame", which is the practice of public institutions of passing the responsibility to other ones, and because of the low political weight of the poor, who are the main victims of famines. According to these authors, these are the main causes of government inactivity especially in the Bihar and Niger famines described above.

With a small amount of empirical evidence and theoretical arguments that seem to help the understanding in a few cases rather than building an alternative model of behaviour of democratic governments facing a crisis, we feel that these critiques do not undermine the validity of Sen's arguments. However, they offer interesting insights into the idea of concentrating more on the institutional arrangements within and outside democracies. The example of Malawi in 2002 focuses attention on state capacity to implement adequate policies within a short time. Whether or not a country is democratic influences the system of incentives likely to make the government accountable. However it is then necessary to analyze the effectiveness and efficiency of these institutions both in general terms and for the specific purpose of preventing famines. These further elements are incorporated in the following quantitative analysis.

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[3] Democratic ideals "include political characteristics that can be seen to be intrinsically important in terms of the objective of democratic social living, such as freedom of expression, participation of the people in deciding on the factors governing their lives, public accountability of leaders, and an equitable distribution of power" (Dreze and Sen, 2002: 1).

2.4 Democracy, institutions and famine: an empirical exercise

This sub-section presents an empirical analysis, which has two main objectives: i) to verify with cross-country regressions based on recent data whether or not democratic institutions are more likely to limit famine mortality; ii) to analyze to what extent the quality of political institutions matters within a group of countries homogenous for political regime. The model proposed here is similar to that developed by Plümper and Neumayer (2009), but refers only to emerging and low-income countries.

The main model is expressed by the following equation:

(1) *FamMort* = f (*PRI*; *affected*; *cal*; *water*; *intconf*; *logPop*; *popdens*)

Famine mortality is a function of the degree of democracy, provided by the level of political rights (*PRI*), the proportion of people affected (*affected*), the amount of calories per capita (*cal*), the amount of drinkable water per capita, the intensity of civil conflicts (*intconf*), the (logarithm of) population (*logPop*), and population density (*popdens*). This way, we analyze the effect of political rights in avoiding famines and reducing the number of deaths during a famine, controlling for these relevant factors.

The second group of models is expressed by the general equation (2):

(2) *FamMort* = f (*Institutions*; *affected*; *cal*; *water*; *intconf*; *logPop*; *popdens*)

Equation (2) replaces the political rights index with other institutional variables. "Voice and accountability" (*Voice*), "control of corruption" (*ControlCorr*), "political stability" (*stability*), and "government effectiveness" (*goveff*) will be separately included in the models.

Then, we will investigate the effect of the institutional indicators separately for democratic and autocratic countries. In this way, it is possible to verify, for example, whether institutional factors explain lower famine mortality, given the same form of government. A system where *corruption* is not widely diffused and does not take a "systemic" form might favour the functioning of institutions, whether or not they are

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labelled "democratic" (Dreze and Sen, 2003). Within democracies, a highly corrupted system in which illegal or immoral behaviours are routinely followed, might increase the likelihood of famine by undermining democratic practices, i.e., people's real opportunity to be informed, to express their opinions, to vote freely, to participate in public life. Similarly, countries characterized by overwhelming bureaucracy or political instability may have lower performances in reducing famine mortality.

2.4.1 Data

Data were originally collected for 110 low-income and emerging countries for the period 1972-2006. Due to missing values in some key variables as well as problems in managing data concerning countries that have been created, merged or divided during this period, the final number of observations for the estimation of equation (1) was brought down to 2905, including 102 countries with, on average, 28.5 years.

The dependent variable is a count variable: number of deaths during a famine. The source of these data is the EM-DAT database developed by the Catholic University of Leuven. The only exception concerns the famine occurred in Bangladesh in 1974, whose data were taken from Devereux (2000). Data concerning the number of people affected – defined as injured, homeless and all "people requiring immediate assistance during a period of emergency"[4] - were taken from the same source. The final variable – proportion of people affected by the famine – was obtained by dividing this number by the size of the population (source: UN Secretariat, 2007).

Data for political rights are included as the reverse of the index measured by the Freedom House. It ranges from 1 (less rights) to 7 (more rights). As suggested by the Freedom House, countries with a political rights index above or equal 5 are defined as democratic, while those with an index below 5 are autocratic.

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[4] Source: EM-DAT glossary, http://www.emdat.be/glossary/9

The other main variables are four Governance Indicators computed by the World Bank, which reflect the quality of institutions (Kaufmann et al., 2007). The first is "voice and accountability", which takes into account various aspects related to the political process, civil liberties, and also the independence of the media. The second is the "control of corruption" index, which reflects the reverse of the level of corruption within national institutions as perceived by government officials and the private sector. The "political stability and absence of violence" index, instead, combines "several indicators measuring perceptions of the likelihood that the government in power will be destabilized or overthrown by unconstitutional or violent means" (Kaufmann et al., 2004, p. 254). Finally, "government effectiveness" describes the ability of governments to effectively deliver public services and make policies. All these indicators are obtained by aggregating a series of variables, and by finally transforming them in standardized indices varying approximately between -2.5 and +2.5. Data are available only for the following years: 1996; 1998; 2000; 2002; 2003; 2004; 2005; 2006. This substantially reduces the number of observations used to estimate the effects of institutions on famine mortality. The correlation analysis of the institutional variables (not reported) shows that "voice and accountability" is highly correlated to democracy,[5] while control of corruption is the institutional indicator with the weakest correlation to democracy.

The source of data for calories and water per capita is the FAO, the Faostat and Aquastat databases respectively. In particular, the first variable is central to the interpretation of famines as food (or calories) availability decline criticized here. , Instead, the intensity of conflicts is taken as a measure of the severity of civil conflicts, and varies between 0 (0-24 deaths) and 2 (1,000 deaths or more). Finally, population

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[5] The Pearson's rho is above 0.90 for all years. That is why "voice and accountability" can be a proxy for democracy (Section 3.1).

data are taken from the UN Secretariat (2007) and divided by the total area of the countries concerned (source: Faostat) to calculate population density.

2.4.2 Results

Following the study of Plümper and Neumayer (2009), we used the negative binomial regression because: i) the dependent variable -famine mortality - is a count variable; ii) there is overdispersion.[6]

The estimates in model (1) of Table 1 show that the political rights index has a highly significant (negative) effect on the number of deaths during famines. This result is coherent with the theoretical framework and with the previous findings of Plümper and Neumayer. In contrast, Rubin (2008a), with different model specifications and alternative measures of famine, found no systemic correlation between democracy and occurrence of famines. Among the other explanatory variables, the proportion of people affected and per capita water availability are the only significant determinants.

We then studied whether or not other institutions-related factors influence famine mortality. The estimates are based only on 460 to 475 observations, clearly reducing the reliability of results; however, we think they can still be used to sort out the general relationship between two or more phenomena. The estimates in models (2) to (5) outline that only control of corruption and government effectiveness have significant (and negative) coefficients. We can conclude from these results that effective and efficient governments together with effective rules and transparent institutions might reduce the likelihood of facing a famine, whether or not a country is "democratic" in a narrow sense.

[Table 1 about here]

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[6] The standard deviation of the dependent variable is more than 37 times larger than the mean: this suggests the use of negative binomial regression rather than Poisson regression.

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To understand better the previous findings, we run separate regressions for democratic and autocratic countries. The results – presented in Table 2 - suggest that in the sample of democratic countries only control of corruption and government effectiveness are significant negative determinants of famine mortality. This indicates again that among countries generally defined as democratic there are differences in the way they manage to keep corruption low and to adopt effective policies, and this is finally reflected, in lower famine mortality among other things. Though the group of democratic states registers much higher mean values in the two institutional indicators, such indicators have a great variability across countries in this group (Table 3).

All the institutional variables are significant determinants of famine mortality in autocratic countries (model (5)-(8) in Table 2). This suggests that non-democratic states can still have a wide set of institutional arrangements that can prevent famines or reduce famine mortality. Voice and accountability and political stability are significant predictors within autocratic states: also their mean value is much larger in democratic states, but has a large variability in non-democratic ones (Table 3).

The latter finding does not contradict Sen's argument on the protective role of democracy. Putting his argument in other words, democracy is likely to be sufficient for famine prevention, but it is not strictly necessary. De Waal (2000) gives four examples of successful attempts of non-democratic governments to prevent famines: 1) Communist China in the period immediately after the 1940s; 2) Sudan, Ethiopia and Somalia during the 1970s; 3) Kenya in 1984; 4) Tigray in northern Ethiopia during the mid-1980s. The point is that in the above cases, "famine measures are a privilege rather than a right" (de Waal, 2000, p. 18). Again quoting de Waal,

There can be anti-famine commitments and anti-famine programmes in the absence of democratic accountability, but an anti-famine contract requires the interested party – the people – to have

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some capacity to enforce the bargain. Liberal political systems provide a number of mechanisms that can help people to do that. In authoritarian systems, the only recourse is protest, either armed or unarmed.

(de Waal, 2000, p. 18).

The lack of re-enforcing mechanisms can seriously undermine the sustainability of these results. For example, in the case of China outlined above, in 1959-1962 there was the biggest famine that had ever occurred in the contemporary era; also in the case of most of the African authoritarian regimes, the system of anti-famine measures collapsed immediately after the 1970s.

Among the other results, it is worth noting that there is no systemic significant negative relationship between calorie-per-capita and famine mortality, as one would expect if following the food availability decline approach. The coefficients of water per capita and population density are often significant and of the expected sign.

[Table 2 about here]

[Table 3 about here]

2.4.3 Discussion

This study provides empirical evidence in support of the "democracy prevents famine" hypothesis. It should also be stressed that the results were obtained on a sample of low-income and emerging countries: given that high-income countries have rarely experienced famines since 1972, the final estimates are likely to underestimate the overall effect of democracy.

The second finding is that a more in-depth analysis should go beyond the system of political incentives existing in different political regimes and move into the analysis of the quality of institutions. The policy environment, the level of bureaucracy, governmental capacity to take decisions in a short period and other factors linked to governance are, in a second stage, crucial for entitlement protection and promotion.

Both the variables "government effectiveness" and "control of corruption" are significant (negative) determinants of the number of famine-related deaths.

Finally, enlightened authoritarian governments with adequate political institutions can still avoid famines even in face of human catastrophes. However, the validity of these achievements in the long-run might be at constant risk due to the lack of re-enforcing mechanisms ensured by people's right to express their voice, a multi-party system, free and independent media, and regular elections.

3. INSTITUTIONS AND INEQUALITY

The very foundation of the problem of inequality is the concept of social welfare. According to the utilitarian approach, social welfare is the sum of individual welfare. Social welfare improvements are not possible (or would not be "Pareto efficient") by re-distributing resources from one individual to another, because a "Pareto" improvement is only a situation in which it is possible to make someone better off, without making someone else worse off. On the other hand, an egalitarian approach would consider re-distribution of resources to avoid the situation where an individual could become richer by taking advantage of the fact that the other is in poor health or in poor education, or is handicapped (Sen, 1973). In this latter approach, the application of the Rawls' criterion would be the best policy; the aim is not individual welfare but the level of welfare in the society. If one individual (A) has a lower level of welfare that another (B), and if B can be made better off by re-distributing resources from A, then the Rawls criterion of justice requires that B should have sufficiently more income to make B's utility equal to A's. In Rawlsian thinking, inequalities have to be adjusted following two principles: 1) offices and positions must be open to everyone under conditions of *fair equality of opportunity*; 2) they have to be of greatest benefits for the least-advantaged members of the society (Rawls, 1971, p. 303). To be

applied, these criteria require more than meritocracy. 'Fair equality of opportunity' requires not only that positions are distributed on the basis of merit, but also that all have equal opportunity, in terms of education, health etc., to acquire those skills on the basis of which merit is assessed. The application of these principles would, in the end, produce much greater advantages for the society as a whole.

Empirically, an interesting explanation of inequality in the Americas is put forward by Sokoloff and Engerman (2000), who, in order to explain inequality in wealth, human capital and political power, suggest an institutional explanation, historically founded, which lies in the initial roots of the factors of endowment of the respective colonies. In general, political institutions set up by the Spaniards and Portuguese in Latin America were different from the ones set up by the British in North America. Moreover, the latter sent educated people and skilled work forces, along with the aristocracy, to the New World, and these started to build their own future, while the Spaniards and the Portuguese did not encourage massive migration from the motherland but sent landlords who basically exploited slaves from Africa.

One of the first cross-country works on inequality was undertaken by Kuznets (1955). He showed that in the early stage of an economic growth process income tends to be unequally distributed among individuals, and over time, the distribution of income worsens. In the later stages, national income becomes more equally distributed. Hence, inequality finally declines after the country has accomplished the "U"-shaped trajectory. Several later empirical studies confirmed this relationship (Chenery and Syrquin, 1975). The reason for such a relationship was attributed to structural changes, which at the beginning of the "transition" bring about job losses and inequalities.

Nevertheless, the implicit trade-off behind the Kuznets curve (economic growth/inequality) and the idea that an increase in inequality is sometimes necessary for rapid growth has been often criticized (Atkinson, 1999). An alterative hypothesis to

explain why income inequality differs between countries is put forward by Milanovic (1994), who shows that inequality decreases in richer societies because social attitudes towards inequality change as those societies get richer, and inequality is less tolerated (Tridico, 2010). Birdsall and Sabot (1994) showed, contrary to the Kuznets hypothesis, that inequality might be a constraint for growth and, if inequality was lowered, then a country could have a GDP per capita 8.2% higher than a country with income inequality 1 standard deviation higher.

A similar hypothesis is suggested by Voitchovsky (2005, p. 273) who, however, stresses *the shape* of the distribution and suggests that inequality at the top end of the distribution is positively associated with growth, while inequality lower down the distribution is negatively related to subsequent growth. Moreover, empirical evidence in cross-countries analysis, from Latin American to East Asian Countries, would pose the question; why does Latin America have high inequality and low growth and, in contrast, East Asia a high growth and low inequality. Birdsall and Sabot (1994) suggest that it is a matter of policies and social attitude towards inequality. In Latin America for long time after WWII, dictators, generals and the ruling classes acted, with little respect for the poorest part of their society, implementing fiscal and trade policies that provided little benefits to the poor. In contrast, in East Asia the ruling classes were more aware of social needs, and implemented policies such as land reforms, public housing, public investments in rural infrastructures and public education which had a positive effect on both growth and income distribution; better educated people can get a better job and earn more; public investment in the rural sector can produce higher farmer productivity and income; public housing and other social services can increase the purchasing power of people, and so forth.

3.1 A model for institutions and inequality

We assume that appropriate institutions can generate growth and can also mitigate inequality. In our econometric model we will use some political institutions such as political stability, from the World Bank, and Adult literacy, from UNDP. Adult literacy is a socio-economic variable strongly linked with institutions. In fact, collective institutions such as public education are largely shaped by social norms and national attitudes positively inclined towards equality and solidarity. A country which invests consistently in public education is a country where these norms and attitudes are strongly developed (Easterly, 2001). Eeducation is a crucial variable because it increases income opportunities, which in turn are functional in reducing income differentials and inequality.

At the same time, lower inequality means higher levels of social peace and cohesion. Sen (1973) saw inequality as strictly linked to the concept of rebellion and indeed the two phenomena are linked in both ways. Inequality causes rebellion, but it may happen that income inequality increases after a rebellion bringing power to a specific apparatus or a nomenclature or a social class; this has happened many times in history when, for instance, rebellions were led by army generals or by elites of nobles. In several transition economies, inequality increased after a "rebellion" which brought oligarchs to power. In the former Soviet Union in particular, inequality increased dramatically after the 1991 August Coup which deposed Soviet president Mikhail Gorbachev and dissolved the USSR. In some African countries, such as Congo and Sudan, the same happened: rebellions, carried out by generals and warlords, deposed previous authoritarian or less authoritarian regimes, but such a change brought about an increase in inequality. Nowadays, economists try to capture a causality nexus (inequality → rebellion → inequality) through the use of some modern governance indicators such as political stability. The link between political stability and inequality is demonstrated in numerous empirical works such as Alesina and Perrotti (1996),

Rodrik et al., (2005), and Easterly (2001), where it emerges that income inequality increases during political instability.

Most countries in our sample, during the years 1993-2005 increased their level of inequality, and we assume that this is because political stability and education worsened (see Table 4).

[Table 4 about here]

In this section we will test the following model:

$$ineq = \alpha + \beta \cdot Pol.Instab - \beta \cdot AduLit + \varepsilon$$

Inequality (Gini Coefficient) is expressed as a function of the political instability index (*Pol.Instab*) and adult literacy (*AduLit*) with a term of error.

[Table 5 about here]

Table 5 presents the results of our cross-section estimates and seems to confirm the theoretical model. Cross section analysis, which relies on averages, can be a more appropriate method to test relationships that depend on long run characteristics (Easterly, 2007).

In the present analysis both the variables political instability and adult literacy seem to be correlated with inequality in the expected direction: higher political stability and adult literacy reduce inequality (Regression I); this confirms our equation model above. When we include the GDP level to control for an income effect (Regression II), we discover that it is not significant. Interestingly enough when we introduce in regression (III) a democratic variable such as Voice and Accountability which is a good proxy for democracy according to World Bank (Kaufmann et al, 2007), then our regression loses consistency because this last variable is not statistically significant. However, Voice and Accountability, although not statistically significant, is positively correlated with inequality. At the same time, the GDP remains statistically insignificant. That means that the higher the level of democracy, the higher

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the level of inequality. Such a result is only apparently surprising. Similar findings have been obtained in the literature: for example, Easaw and Savoia (2009) found that advanced democracies do not produce less unequal economies. At the same time, in less advanced economies, property rights increase income inequality. Also Sen (1999) points out that there are several cases of countries having lower levels of democracy and lower inequality, such as China or former communist countries.

Democracy entails democratic political institutions (civil liberties and political rights). In particular, following Dahl (1971) a *democratic* country should have the following features: 1) election of government officials; 2) free and fair elections; 3) an inclusive suffrage; 4) the right of all citizens to run for public offices; 5) freedom of expression; 6) alternative information; 7) associational autonomy. This definition, is followed also by Freedom House (2009), states that a country is democratic if it has free and fair political institutions. Another interesting definition of democracy is provided by Schumpeter (1943), who defined democracy as a 'method' for making decisions. This method involves the selection of leaders through competitive elections. Democracy also has many limitations when it becomes an elite competition for power and office: '…it means only that people have the opportunity of refusing or accepting the men who are to rule them' (Schumpeter, 1943, p. 269). Or, to use a more provocative definition, "Democracy is the recurrent suspicion that more of the half of the people is right more than half of the times" (White). Following White's approach, in a democracy a group takes decisions that carry advantages for itself, i.e., increases its income, reduce its taxes, etc. By contrast, with the unanimity rule all must agree on the decision. In the case of redistribution of income to a group, everybody has to agree otherwise no decisions will be taken. No group will agree to an increase in another group's income at its own expense. Therefore, the rule of unanimity although very

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difficult to achieve, would carry advantages for all in the case redistribution of resources. The two figures below demonstrate this phenomenon.

[Figure 1a about here]

[Figure 1b about here]

In theoretical terms, all this does not ensure that democratic countries reduce inequality. This is also confirmed by our empirical tests.

In conclusion, the econometric tests show that inequality increases where there is a lower level of adult literacy associated with higher political instability. The level of income is not significant as a control variable. Democracy appears as a trivial variable and, coherent with most of literature, is not relevant for a reduction in inequality.

4. CONCLUDING REMARKS

This paper engaged in the broad debate on institutions and development with an emphasis on low-income and emerging countries. The main aim of the paper was to understand *whether* and *which* political institutions are important in preventing famines and reducing inequality, or at least in guaranteeing lower levels of inequality.

As a general conclusion, we can argue that political institutions are essential determinants of the two phenomena. However, an important distinction should me made with respect to the type of institutions that affect famine mortality and inequality.

The findings on famine largely support the so-called "democracy prevents famines" hypothesis elaborated by Amartya Sen during the 1980s. In our panel of countries, the variable expressing the degree of democracy has a largely significant and negative effect on famine mortality. The following exercises, carried out on separate samples of democratic and autocratic countries, show that only "control of corruption" and "government effectiveness" of the four governance indicators are significant in the first sample, while they are all significant in the second. This suggests that enlightened

authoritarian governments with adequate, though not democratic, political institutions can still avoid the occurrence of famines even in the face of a dramatic crisis caused by a natural or man-made disaster. However, the sustainability of these achievements might be undermined by the lack of re-enforcing mechanisms ensured by the individual's right to express opinions, a free and independent media, and periodic elections. In one sentence, "famine measures are a privilege rather than a right" in authoritarian regimes (de Waal, 2000, p. 18).

The analyses that aim to show which institutions better explain inequality in emerging and low-income countries provide different results. First of all, democratic institutions, approximated by the World Bank indicator of "voice and accountability" are not significant factors also when GDP per capita is controlled for. The levels of inequality can be high within or outside a democracy. This is in line with Amartya Sen's argument that democracy has a clear "protective" role against "spectacular" crises such as famines, while its role in poverty and hunger reduction is much more unclear. Sen (1983, 1999) used the example of China and India after 1947 to show this: while the democratic India performed better in famine prevention than the authoritarian China, the latter has managed a greater reduction in poverty and malnutrition since 1990s. In the same way, this study provides evidence that the role of democracy during sudden crises such as famine is very different from its role when facing structural problems such as inequality.

Moreover, we discovered that one main institutional variable is important to reduce inequality, namely political stability. Following that part of the literature which argues that rebellion may increase the level of inequality, we found out that political instability is positively correlated with inequality. At the same time, lower inequality means higher levels of social peace and cohesion. Inequality may cause rebellion, but what probably happened in many emerging and low income economies is that income

inequality increased after a rebellion which brought particular groups, oligarchs, specific power apparatus etc to power. Political stability, however, should be associated with high adult literacy for countries to enjoy lower levels of inequality.

Finally, further research is needed in the future to sort out the causal mechanisms through which these political institutions affect the occurrence of famines and the levels of inequality.

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Tables and figures

Table 1. Negative binomial estimates of famine mortality: full sample

	(1) with PRI	(2) with Voice	(3) with ControlCorr	(4) with Stability	(5) with Goveff
Constant	-4.807*	-4.726	-10.450**	-5.106	-12.626***
PRI	-0.770***	–	–	–	–
Voice	–	-0.802	–	–	–
ControlCorr	–	–	-3.793***	–	–
Stability	–	–	–	-1.004	–
Goveff	–	–	–	–	-3.239***
Affected	24.977***	71.443	67.633	67.752	89.752
Calorie	0.001	-0.002	-0.002	-0.003*	-0.001
Water	-0.000***	-0.000	-0.000	-0.000	-0.000**
Intconflict	0.297	-0.206	-0.455	-1.003	-0.153
Logpop	0.263	0.470	0.602*	0.556*	0.714**
Popdens	0.000	-0.006**	-0.005*	-0.005**	-0.008**
1/lnalpha	6.144***	5.047	4.912	5.050	5.005
Alpha	465.949***	155.630***	135.947***	155.953***	149.227***
Log pseudo-likelihood	-415.466	-74.107	-72.878	-74.109	-73.474
Wald chi2	274.31***	34.01***	65.23***	33.60***	74.58***
N	2905	462	460	470	475

Note: *** = significant at the 0.01-level; ** = significant at the 0.05-level; * = significant at the 0.1-level. The estimates were carried out with robust standard errors; clustered standard errors led to the same levels of significance for all the variables.

Table 2. Negative binomial estimates of famine mortality: selected sub-samples

	Democratic countries				Autocratic countries			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-1.934	-7.211	-5.102	-19.101***	-6.753	-5.812	-6.523	-11.910***
Voice	-2.087	–	–	–	-3.333**	–	–	–
ControlCorr	–	-7.517***	–	–	–	-5.619***	–	–
Stability	–	–	0.876	–	–	–	-4.416***	–
Goveff	–	–	–	-8.843***	–	–	–	-3.151**
Affected	46.154	38.393	23.433	44.258	123.250	81.204	49.204**	142.207
Calorie	-0.004**	-0.005**	-0.004***	-0.005***	-0.003	-0.001	-0.003***	-0.002
Water	-0.000***	-0.004***	-0.000**	-0.000***	-0.000	-0.000	-0.000***	-0.000
Intconflict	-0.830	-0.018	-0.852	-1.126**	1.017	0.468	-2.873*	0.698
Logpop	0.770*	0.942**	0.950**	1.824***	0.558	0.229	0.598	0.731
Popdens	-0.005**	-0.006**	-0.004**	-0.009***	-0.025**	-0.028***	-0.027***	-0.022***
1/lnalpha	3.787	3.476	3.788	3.480	5.749	5.643	5.716	5.757
Alpha	44.104	32.346	44.159	32.464	313.724	282.324	303.584	316.358
Log pseudo-likelihood	-36.133	-34.497	-36.329	-34.281	-33.938	-33.629	-33.855	-33.959
Wald chi2	72.79***	57.01***	84.17***	39.20***	56.77***	55.95***	55.52***	53.36***
N	190	197	200	202	272	263	270	273

Note: *** = significant at the 0.01-level; ** = significant at the 0.05-level; * = significant at the 0.1-level. The estimates were carried out with robust standard errors; clustered standard errors (not reported) led to the same levels of significance for all the variables.

Table 3. Descriptive statistics of institutional indicators, by political regime

Democratic countries

Variable	Obs	Mean	Std. Dev.	Min	Max
Voice	369	0.190	0.408	-1.160	0.990
ControlCorr	390	-0.251	0.567	-1.350	1.480
Stability	384	-0.090	0.698	-1.993	1.401
Goveff	396	-0.194	0.557	-2.520	1.470

Autocratic countries

Variable	Obs	Mean	Std. Dev.	Min	Max
Voice	476	-1.004	0.530	-2.300	0.200
ControlCorr	468	-0.733	0.571	-2.090	1.620
Stability	477	-0.890	0.869	-3.073	1.017
Goveff	478	-0.788	0.590	-2.270	1.010

Table 4. Descriptive statistics, by country groups

|	Economic growth 1995-07	Gini 1993	Gini 2006	Gini variation 1993-06	Political Stabil. Av. 1998-06	Adult Literacy Rate 2006
All countries	4.71	37.1	39.2	7.7	-0.04	92.2
CIS (12 countries)	6.1	34.9	35.5	4.4	-0.7	99
CEECs (11 countries)	4.1	28.3	31.6	13.2	0.4	98.9
Latin American (8 countries)	3.5	49.1	53.4	10.3	0.1	91.4
Asia (9 countries)	5.5	36.2	38.5	6.8	-0.1	78.9
Africa, Middle East and Turkey (8 countries)	4.2	43.3	44.5	3.8	-0.5	80.4
EU – 2 old MS	5.6	30.0	34.0	13.8	0.8	99

Table 5. Estimates of income inequality (dep var.=Gini coefficient 2006)

	(I)	(II)	(III)
Constant	50.303* (2.866)	51.039* (3.175)	52.587* (3.331)
Voice and Accountability avg 1996-06	—	—	2.593 (1.855)
Political Instability avg 1996-06	2.408*** (1.439)	2.892*** (1.689)	2.140 (1.755)
Adult Literacy 2006	-0.499* (0.118)	-0.483* (0.123)	-0.490* (0.121)
GDP 2007	—	-0.000	-0.000

N	50	50	50
R-squared	0.283	0.288	0.318
Prob > F	0.000	0.002	0.002

Note: *** = significant at the 0.01-level; ** = significant at the 0.05-level;
* = significant at the 0.1-level. Standard errors in parenthesis.
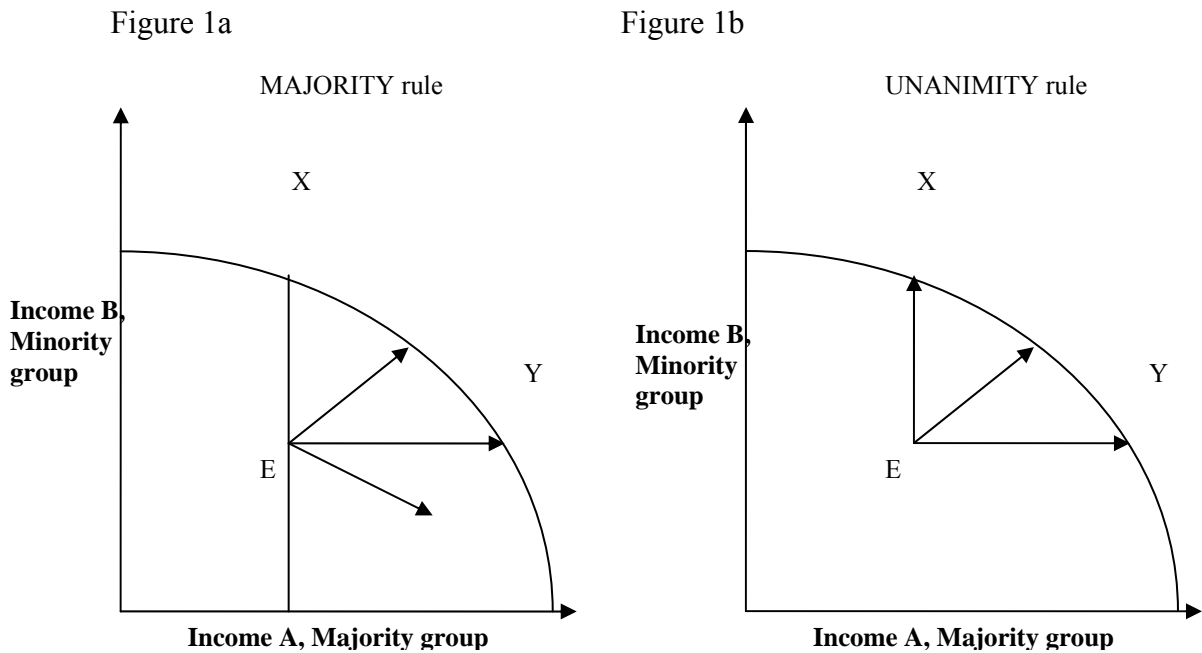
Figure 1a   Figure 1b

Note: figure 1a shows the possible distribution of income in a society governed by a majority rule, where group A is the majority group and B the minority. The arrows show possible directions of income improvements, which would never go into a direction which would bring about income reduction to the group A, while this could happen to group B. Figure 1b shows the possible distribution of an income improvement in a society governed by a unanimity rule. The directions of the arrows would never go into a reduction of income, neither for group A, nor for group B.