"Do what is Right, Come what May": a Cross-Country Study on Charity*

"Fazei o Bem sem Olhar a Quem": um Estudo Cross-Country sobre a Caridade

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Abstract: This article investigates the motivations behind charitable behavior and tries to access the role played by government in influencing its level. Considering impure altruistic models on charity, we regress 2010 cross-country charity data (money donations, volunteered time and help to strangers) on institutional, demographic and economic variables, using SURE, OLS and Fractional Logit estimation procedures. Our econometric tests show institutional and demographic variables are even more relevant than the so-called crowd-out effect from government expenditure in determining charitable behavior. These findings indicate the design of oriented public policy may not be enough for the development of a pro-charity ethos.

Keywords: Charity. Cross-country. Fundraising. Volunteering.

Resumo: Esse artigo investiga as motivações por detrás do comportamento caridoso e tenta identificar o papel da intervenção governamental em alterar o seu nível. Consideramos modelos de caridade de altruísmo impuro e regredimos dados transversais de países para o ano de 2010 (doações em dinheiro, trabalho voluntário e ajuda a estranhos) utilizando variáveis institucionais, demográficas e econômicas, valendo-nos dos métodos SURE, MQO e Fractional Logit. Nossos testes econométricos apontam que variáveis institucionais e demográficas são ainda mais relevantes que o *crowd-out* do gasto governamental para a determinação do nível de caridade, indicando que o desenho de políticas públicas pode não ser suficiente para o desenvolvimento de uma cultura pró-caridade.

Palavras-chave: Caridade. Cross-country. Captação de recursos. Voluntariado.

JEL Classification: D64; L33; H41; I38.

1 Introduction

There are different definitions of charity in social and economic literature. Becker (1974, p. 1083) defines charity as "contributions of time or goods to unrelated persons or to organizations", emphasizing the anonymity dimension of charity.

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Other authors as Freeman (1997, p. S140) think in volunteering as a “work performed without monetary recompense”, which underlines the lack of financial ambition of individuals, an important but not essential feature of charity, at least directly. In a juridical report prepared by the Australian government, the recommended definition of charity involves a “not-for-profit entity, that has a dominant purpose(s) that are charitable, altruistic and for the public benefit” (SHEPPARD, 2001, p. 5). From a more libertarian point of view, Harper (1978, v.1, p. 232) defines “truly charity” as “assistance given voluntarily and anonymously from the product of one’s own labor, or from his property that has been saved”.

Regardless of its definition, charity is not a marginal or residual economic activity (as one might think), nor solely an act motivated by religious beliefs or tax proposes. In this research paper we will try to decompose the main factors behind charity behavior, a sector that in the USA represents nearly 2% of personal income (ANDREONI, 2008). For such analysis we will consider The World Giving Index 2010, a Charity Aid Foundation (CAF) publication containing cross-country data on charity, which will be the dependent variable in our econometric analysis testing a wide range of institutional, demographic and economic variables, an innovational attempt in the literature.

As we can infer from Table 1, charity may depend on a complex set of factors. Rich countries as Spain and Finland present very low levels of giving if compared to some developing or even poor countries as Sierra Leone, Guatemala and Morocco. In the same way, we figure out that former British colonies present a high level of charity of all kinds, while communist and ex-communist countries of Eastern Europe are among the less charitable ones.

Table 1 - World Giving Index 2010 for selected countries

Country	% of population who ... in the previous month (March, 2010)			World Giving Index 2010 (Arithmetic mean)
	Donated money	Volunteered time	Helped a stranger	
Australia	70%	38%	64%	57%
USA	60%	39%	65%	55%
Sierra Leone	29%	45%	75%	50%
Guatemala	46%	33%	51%	43%
Morocco	72%	4%	44%	40%
Finland	42%	28%	42%	37%
Brazil	25%	15%	49%	30%
Spain	25%	13%	44%	27%
Hungary	22%	9%	32%	21%
Russia	6%	20%	29%	18%
China	11%	4%	28%	14%
Greece	8%	5%	28%	14%

Source: Tabulated from CAF (THE WORLD GIVING INDEX, 2010).

One of our main goals is to test if governmental interference in economic and social life depresses the charitable impulse of individuals. If confirmed our hypothesis, it would mean (for instance) that some welfare state countries are under serious risks during economic crisis, since in these times governments are forced to cut public expenditure in social areas (such as health and education) which might not be compensated by individual charity. This supposed lack of private compensation comes from the fact that charity is a habit, and as a habit pending on social networks it cannot be created out of thin air or through government persuasion, demanding time and a set of ethical values difficult to impose from above. In addition, recessions usually lessen household's income, pointed by the literature as another important factor behind charity. So crisis in welfare state countries may constitute a mix of concomitant negative determinants to charity: bad institutions and diminishing income. With results at hand, we could suggest public policies to be implemented by governments in trying to develop private charity and also comprehend the institutional limits of its actions. At the same time, our results may help fundraising campaigns to improve their outcomes.

This paper is organized in the following way: we begin with a resume on the charity literature, trying to understand the different lines of thought and justifying why our approach is unprecedented; then we present the methodology and data

used in our econometric tests; and finally we conclude with our estimations and its policy implications.

2 Literature Overview

For the sake of a better understanding, we divide literature presentation between a theoretical analysis and an empirical one, as follows.

2.1 Theoretical Literature

Especially during the second half of the 20th, economists tried to understand what motivates people to support other people or causes through charity.

In early studies, the understanding of charity was restricted to the idea of charity as a private way to provide a public good, meaning that people behaved altruistically in the sense of giving their money (or time) in order to increment the quantity and quality of public goods. Starting from this vision that links charity to the public finance, researchers brought the concept of Ricardian Equivalence in an attempt to understand donors' behavior in a rational fashion. Doing so, Andreoni (1989) postulated that investment in public goods through taxation would crowd-out private donations in a one-to-one proportion. Thus, the distribution of wealth between government and tax payers would not affect the total supply of public goods, since rational individuals would reallocate their money previously destined to charity to the payment of taxes that would be used to the same end. Stretching this reasoning, Warr (1982) suggested that tax policies would only be effective in increasing the provision of public goods if beyond a point where private charity of all agents reached zero, inducing a forced transfer of resources from the consumption of private goods to the 'consumption' of public goods.

Later on, with better understanding of coordination problems in big societies formally presented by Olson (1971), charity researchers brought the idea of free-riding to their studies, inferring that a greater part of former donors would free-ride other people's donations in larger economies. According to this, per capita private donations would converge to zero (ANDREONI, 1988). This model was then called the pure altruist model, and can be synthesized by the following maximization problem:

$$\begin{aligned} \max U_i &= f(x_i, G) \\ \text{subject to: } x_i + g_i &= w_i \text{ and } g_i + G_{-i} = G \end{aligned}$$

where U_i is the utility function to be maximized, x_i is the consumption of private goods, g_i is the private donation to public goods, w_i is the individual income, G is the total provision of public goods coming from private donations, while G_{-i} are the aggregate donations expected by individual i 's contribution.

This model can be sophisticated through the inclusion of forced contribution to public goods, i.e. taxation, which alters the budget and public goods' constraints to:

$$x_i + g_i = w_i - \tau_i \text{ and } g_i + G_{-i} + T = Y$$

where τ_i is the 'forced donation' by individual i , T is aggregate tax revenue by the government and Y is the total provision of public goods, paid now with money from taxes and donations.

Using a Nash Equilibrium concept it is easy to prove that spontaneous private donations would converge to zero as economies become bigger, reassuring the necessity of taxation to compensate the free-ride problem.

However, after observing real data and figuring that charity did not decrease with economic growth and complexity (actually it increased), some theories emerged stating (for example) the importance of donations by rich people, sometimes encouraged by altruistic motivations as having bigger control over charity institutions and sometimes looking for social visibility and other egoistic feelings.

Despite analyzed through different points of view and nuances by Becker (1974) and Andreoni (1990) – and primarily by Bentham during the XVIII-XIX centuries –, these egoistic motivations brought the theory of private demand for goods into light, i.e. when economists notice a constant growth in charity, they realize that public policy and economic development were not the only causes in influencing charity. The so called 'warm-glow factor' was then recognized as another variable capable of inducing people to behave charitably. The arrival of these 'inner motivations' to the charity literature revolutionized research, which thenceforth have tried to measure the relative importance of altruism and egoism, testing the so called 'impure altruistic' models.

The Pure Egoistic model presented in Chart 1 was developed by Becker (1974), in which R_i is the total social reputation (which can be 'purchased' by donations) and $\bar{R}_i$ is the initial endowment of social reputation, different for each individual. In the Impure Altruistic model presented in the same chart, we have a stylized version of the mainstream models on charity, in which g_i enters directly in the utility function as a normal private good (warm-glow), disassociated of its public good function, captured by G solely.

Chart 1 – Stylized models of charitable behavior under pure egoism and impure altruism

	Pure Egoism	Impure Altruism
Utility function	$U_i = f(x_i, R_i)$	$U_i = f(x_i, G, g_i)$
Constraints		
Budget	$x_i + g_i = w_i$	$x_i + g_i = w_i$
Public Good	$g_i + \bar{r}_i = R_i$	$g_i + G_{-i} = G$
Social	$x_i + R = w_i + \bar{r}_i$	-

Source: Author's own elaboration.

So, after the turning-point of warm-glow ‘discovery’ a bunch of new issues emerged in the literature. Among them we can point out studies on: the decisions about time allocation to volunteered work, the role of fundraising institutions, the signaling issues, the effect of monetary incentives to donations, the impact of lotteries, the effect of donations in kind, among others. All these topics helped social scientists to map human behavior, sometimes proving some sociological patterns and sometimes demystifying universal truths about human goodness. Their support to charities’ fundraising campaigns should not be neglected as well.

2.2 Empirical Literature

After an overview of the literature about charity, we now proceed with a quick glance on its main empirical findings, and the new insights and concerns they brought to surface.

Firstly, we address the issue of estimating the real (if there is one) crowding out effect of the public expenditure on charity, testing the pure altruistic models’ hypothesis of a one-to-one compensation or the alternative hypothesis of a below-one elasticity. This check was made in literature by computing the price elasticity of individual donations, considering the subsidies given to donations through tax rebates as the donation price.

Tests indicated different effects depending on the time horizon of analysis: in the short-run substitution is well above -1 but in the long run this relationship lays below one (in absolute terms), although some authors found a permanent

relationship between -1.1 and -1.3, indicating that by cutting taxes government could increase the total supply of public goods through private donations (ANDREONI, 2008). Another important finding is a below 1.0 income elasticity of charity (ANDREONI, 2008) implying that giving is a normal good. Although, some authors consider donations as a luxury good, advocating the importance of wealthy people's donation and therefore lobbying for a progressive subsidies system that encourage rich people to donate. The empirical support for this policy proposal comes from estimations of price elasticity close to 1.5 in the case of subsidies for estate giving (ANDREONI, 2008).

In an anthological paper, Duncan (1999) accused the studies on charity of ignoring volunteered time as a donation, which could underestimate government's crowd-out effect. The author argues that time and money should be perfect substitutes in a model in which what matters is the value of labour supply. According to this model, we would never observe a physician volunteering in a soup kitchen, because if the physician is a rational individual it would be more effective to the social cause if he worked normally as doctor, earning its usual high wage, and then donated even more money/value to the charity (also consuming more private goods). So, in equilibrium, individuals would allocate money and time to charity in order to equalize their marginal utilities, implying that charities would never be capital constrained, i.e. volunteered time would never be in excess because when abundant its marginal utility is much lower than donations in cash that could be used to buy capital (for instance, machines, furniture, food etc.).

The model proposed by Duncan (summarized in Chart 2) also predicts that the value of volunteered time increases the higher the human capital (*ceteris paribus* for the income level). This outcome has been proved statistically, although it turns unidentifiable if higher donations are due to higher wages (i.e. a price effect) or to any other unobservable individual motivation correlated to education and that increases donation in quantity (as 'warm-glow' factors). Freeman (1997), in turn, found a positive effect of education and wages in determining if an individual volunteers time or not, but a negative effect on the number of hours supplied (especially for women) pointing to an opportunity cost hypothesis. Andreoni (2001), on the other hand, remembers that maybe the real effect of education on donations could have been overestimated due to the omission of wealth in those regressions (i.e. an omitted variable bias), since wealth is highly correlated to human capital and charitable behavior at the same time.

Chart 2 – Stylized model of money and time donations under impure altruism

Utility function	$U_i = f(x_i, l_i, Z(G), g_i)$
Constraints	
Budget	$w_i(t - l_i) = x_i + g_i = x_i + d_i + w_i v_i$
Public Good	$Z(G) = Z^u(g_i + G_{-i})$
Time	$t = l_i + v_i + \text{hoursworked}$
Labels	$v_i = \text{volunteer} \quad l_i = \text{leisure} \quad d_i = \text{moneydonations}$ $w_i = \text{wage}$

Source: Author's own elaboration, based on Duncan (1999).

Besides the intuitive idea that governmental expenditure on charities and public goods might crowd-out private charity, Andreoni (2001) reminds we should not ignore other potential effects of governmental intervention in the charitable sector: the signaling that governments provide about charities' reputation and, on the other way round, the adverse incentives it gives to fundraising, since charities may be discouraged to start campaigns (by diminishing their efforts) after having public money for granted. However, assuming government correctly represents voters' wishes, the crowd-out may be an almost costless transfer from voters' preferences to government's actions, losing the usual negative meaning of the word, i.e. the governmental support to charities may be a simple internalization of voters' will to donate to given institutions/causes (ANDREONI, 2008).

In trying to explain why charity had almost stagnated in the United Kingdom between 1974-1994, Pharoah and Tanner (1997) proposed three different explanations: a) the religiousness decline; b) the increase in income inequality, shrinking the number of donors despite rising the per capita donation, due mainly to richest people's grants; and c) the change in charities' role, beginning as non-profitable amateur institutions and becoming professional companies with strong support from governments, which made donors lost confidence on their supposed independent purposes (contrasting with Andreoni's positive signaling hypothesis).

Composing the experimental literature testing impure altruistic models, we highlight the study of List *et al.* (2006) in which the authors investigated the effects

of lottery games in boosting fundraising campaigns' outcome, in addition to testing the effect of solicitors' physical attractiveness on donation. The authors found through a field experiment in North Carolina that lotteries can attenuate the supposed negative effect of free-riding on the provision of public goods by giving private incentives for donation and then increasing the number of people who donate. Surprisingly (or not), an increase in solicitors' beauty brought the same quantitative effect of lotteries, especially among potential donors from the male sex, confirming the anecdote that 'People Give to People, Not Causes' and the role played by warm-glow in defining donation attitudes.

Testing another kind of social interaction treated as a 'warm-glow' factor, Ariely, Bracha and Meier (2009) found that monetary incentives have a dubious effect on charity depending on whether donations are exhibited to others or not. The authors found that when donations are public displayed, monetary incentives (salaries or any kind of reward) can discourage donations, showing that charity has a very strong image component since donors prefer not to be seen as ambitious/opportunists or greedy before society. In the other case, when information is only privately available, people react as the strict concept of rationality predicts, increasing their donations if there is any monetary incentive at stake. Another variable tested by the authors was the impact of goodness perception about charities and its impact on donation. The results show that good causes as the American Red Cross are better off in terms of fundraising compared to 'bad ones' (on individual and social perception, as the National Rifle Association) in both scenarios with public and private available information, making evident that 'good causes' do have an important impact on donations (in opposition to the famous anecdote).

In this same line, Glazer and Konrad (1996) and Freeman (1997) investigated other motivations linked to social behavior. Freeman found that the 'F-Connections' (family, friends and firms) play an important role in bringing individuals to engage in charitable activities, i.e. when one of the 'Fs' asks for voluntary contributions of both time or money people are more prone to help, sometimes due to social pressures sometimes due to the positive signaling about the institutions' reputation giving by the 'Fs'. Glazer and Konrad, in turn, showed that donations of money can be useful for signaling social status in a scenario of imperfect information. It happens when 'vain' people want to exhibit their social status to commons by contributing with big amounts of money, by showing that even huge amounts of money cannot affect their general standard of living. This nuance is demonstrated satirically through the pattern of donations when charities disclose ranges of donation and not an exact amount of money, so for instance, when charities divide donations between \$100-500, \$500-1000 and so on and so forth, there is a huge concentration of donations just slightly above the lowest levels (\$100 and \$500 in

this example), showing that public goods' supply may not be the sole concern of donors.

Considering our brief description of the empirical literature, we find one should not ignore human pride and vanity in trying to understand people's intentions behind any charitable attitude. Moral values and social pressure also were shown to be important sources of 'goodness'. As it would be too pretentious to make any inference about human pride/vanity through a cross-country perspective, this research paper will restrict itself (like it is not as ambitious) to investigate the formation of the last factors. In reassuring the importance of such variables in shaping the charitable behavior (letting aside pride and vanity), we quote below some other symptomatic empirical results:

- a) In the USA, almost one-third of money donations were made by non-itemizer families in 2003 (ACKERMAN; AUTEN, 2006).
- b) Usually money donors are also time donors (ANDREONI; GALE; SCHOLTZ, 1996; FREEMAN, 1997).
- c) Nearly a half of donors gives money or volunteers (or both) to religious institutions in the USA (SAAD, 2008; ANDREONI, 1996, 2001).
- d) Controlling for gender, education and income, being married and having children increase the probability of enrolling in volunteering work (FREEMAN, 1997).

Summing up, we are questioning ourselves: from where do come these beliefs, individual ethics, social rules and (if we can put this way) altruism? We expect the economy to answer us partially, while the institutions and the demographics could help us to complete the gap.

3 Methodology and Data

This paper investigates the motivations behind charitable behavior and tries to access the role played by government in influencing its level. In an ideal World, we would prefer to focus charity through a different and stricter perspective, characterized by one of Harper's requisite for "true economic charity": the anonymity (HARPER, 1978, v. 2, p. 565). This indispensable quality fits with one of the data released by CAF, namely, the percentage of population who helped a stranger in the previous month (*ch_stranger* from now on). However, this variable is not as precise as we would like it to be, since CAF data do not display the quantity donated by the charitable people, i.e. was it a tip to a beggar, the donation of a wheelchair to a handicapped or three days painting a school he/she had just heard about? In the same manner, the other two information released by CAF, the % of people who contributed to charity with money and by volunteering time (*ch_money* and *ch_time*, respectively) are also subject to the same flaw. As none of the data is ideal,

we prefer to perform estimations with the three variables. Doing so, we let data to say what is important (or not) in determining the level of charity.

Our cross-country approach to charity is new, mainly due to the absence of a unified survey using the same methodology all around the World. In this survey, carried out in 153 countries and covering 95% of World's population, GALLUP interviewed 1,000 over-15 people in each country by a representative sample of individuals living in urban centers, except for bigger countries (where more than 2,000 people were surveyed) and smaller ones (with about 500-1000 interviews). Surveys were carried out by telephone or face-to-face depending on country's telephone coverage (CHARITY AID FOUNDATION, 2010). As we do not have the full database containing all individual interviews, it is impossible to perform a microdata analysis. In the meantime, as we do not have a series of these charity variables it is also unfeasible to estimate a panel. Moreover, as we also want to test the effect of institutional variables (that do not change over time, like religion, law/economic system and so on) the cross-section analysis is the only and the best alternative.

Notwithstanding, we acknowledge the conceptual problems in generalizing individual attitudes using aggregation, by ignoring individual idiosyncrasies and motivations. We also recognize the problems of cross-country approaches as analyzed by Pande and Udry (2005), in forgetting countries' specificities and the endogenous process involving institutions. A good example of it is the difference in tax rebate legislations among countries, very difficult to compare (let alone to compute in numeric terms) in a wide cross-country regression. Meanwhile, in defending our approach, we try hard to mitigate these problems by including in our set of explanatory variables a diverse group of demographic, economic and institutional factors.

In order to choose our independent variables we considered some stylized facts concerning individual and group analysis of charity and extended some implications of it to a macro perspective.

The *population* variable may capture the so-called free-ride effect in the provision of public goods just like the well-known example of big condominiums, where it is difficult to enforce or charge someone specifically for the help of others. Low population density (*density*), in its turn, can bring dubious effects: from one side we expect sparsely populated countries to compromise day-to-day relations weakening charity, while from the other the poor coverage of public services (expect in large countries such as Russia, Brazil or Mongolia) could motivate stronger social networks inside the 'forgotten areas' or even from abroad. Another factor to be considered is the share of urban population (*urban*), since rural areas are known for stronger links between neighbors and fellow citizens.

Economic variables like per capita income (*income_pc*) and its hybrid version adjusted by inequality (*income_pc_fair*) as well as the % of younger and of older people (*sh_younger* and *sh_older*) will try to capture individual budget and time constraints from an aggregated point of view. Regarding inequality and poverty, we have an 'a priori' guess: whilst poverty accessed by *urban_slums* may reflect a material difficulty in donations, the *income_pc_fair* could translate a bigger willingness (or even coercion) to repair 'social injustice' in an unequal society. Besides, we also have other momentum variables whose influence rests over both warm-glow and the budget constraint, like *gdp_growth* and *unemployment* rates, whose econometric results will be explored further along Chapter 4.

In behalf of testing the crowd-out effect through a cross-country approach we must understand first why it is unprecedented in the literature. Duncan (1999) tried something similar, testing the crowd-out effect of government expenditure through microdata estimations for donations of time and money in the USA using household government expenditures in each state of the federation. As the author points out, household government expenditure may not capture properly the government supply of public goods and, even if it did, sometimes a greater part of these expenses could not be complemented or substituted by household donations (as bureaucracy, for example). Besides, and in defense of our approach once more, we take account of another argument against Duncan's attempt which is the small variance in public expenditure across US states if compared to our cross-country dataset. In trying to override the issue of the substitutability of public goods, we consider the sum of public expenditure in education and health as a percentage of the GDP (*gout*), using World Bank data.¹ We also constructed a *gout_perceived* index in order to calibrate government expenditure by its perceived level from the taxpayer perspective.

As is important to note, charity is in some way a consolidated habit, so we expect short run circumstances in economy do not influence charity as much. In avoiding short run events to compromise our estimations, we used 5-years average of economic variables as *unemployment*, *gdp_growth* and *gout*. This approach assumes (for example) that the charity level depends more on the persistence in government expenditure than on today's government intervention, being coherent with the habit hypothesis.

We also include variables aiming to explain how the pure warm-glow feeling is conformed, from its more elementary forms as moral and cultural. A first group of variables intends to represent a spontaneous impulse towards generous attitudes, such as the general level of education (*human_capital*) and of religiosity

1 Through this approach we ignore purchasing power effects of different costs in supplying educational and healthy services in each country, assuming they are proportional to the income level.

(religious), which can be more specifically evaluated with the help of *christian* and *catholic* parameters.

From the strictly institutional side we included dummies for countries with a common law legal system (*common_law*)² and also for former and current communists ones (*communist*).³ We expect the first present a strong positive effect, as British tradition are known for its liberal and charity concerned guidance (for a complex discussion on formal jurisdiction see Sheppard (2001), while for historic development we recommend Davies (2016)). For the latter we expect the consequences of a long lasting socialist mindset in terms of state-dependency will come to surface in the form of a negative effect for all kinds of charity.⁴

Furthermore, we constructed regional dummy variables in a way not as arbitrary as it might seem. We aggregated some of the thirteen World's regions used by CAF considering some historical and institutional similarities, as an Arab World dummy including Northern Africa, Western Asia and Middle East for its religious similarities. We also aggregated the North America, Western and Southern Europe and Oceania considering that colonization was made mainly by European population (as in the USA, Canada and Australia). The Latin America dummy includes predominantly catholic regions where besides the European colonizers there was a massive contribution of native and slave population to its ethnical mix. Because of this aggregation made not only for geographical reasons, we expect that the inclusion of regional controls would diminish the effect of institutional variables.

The explanatory power of institutional and regional variables can be deducted beforehand if one considers conditional means presented in Chart 3, taking a wider sample of 149 countries. For example, while our suggested group of Arab countries volunteers 7.8 σ below overall average – 12.3 vs 20.2 – they help strangers 4.3 σ above – 52.0 vs 46.8. In the same fashion, whether *common_law*=1 all kinds of charity are at least 6 σ above average, while for *communist*=1 they are from 2.2 σ to 7.8 σ below.

2 See Abadie and Gay (2006) for a similar use of this variable in a cross-country approach.

3 The use of an ex-communist dummy in econometric regressions is not new. Kageyama (2009) is straightforward in applying the variable in order to explain women happiness disparities across European countries.

4 Harper (1978, v.1, p.233-234) is precise in his description of how government intervention can compromise social links: "When a taxpayer is forced to contribute to 'charity' in spite of his judgment of need, he will increasingly shun the sense of responsibility which is requisite to a spirit of compassion; he will lose compassion as he more and more accepts the viewpoint: 'That is the government's business!'"

Chart 3 – Conditional means and standard deviations (σ) of charity variables on constructed dummies

	ch_stranger		ch_money		ch_time		Obs
	Mean	σ	Mean	σ	Mean	σ	
Full Sample	46.8%	1.2%	30.6%	1.9%	20.2%	1.0%	149
communist=1	37.3%	1.8%	21.4%	2.0%	18.0%	2.1%	39
common law=1	54.5%	3.4%	45.5%	6.0%	27.5%	2.8%	15
Eastern Asia	35.7%	3.8%	32.5%	8.5%	18.0%	3.8%	6
Southern Asia	35.7%	3.4%	34.8%	5.5%	22.2%	4.3%	13
Sub-Saharan Africa	49.5%	2.3%	18.4%	1.5%	21.8%	1.7%	36
CEEu+CA	35.5%	1.7%	18.5%	2.0%	17.8%	2.5%	28
Arab	52.0%	2.2%	32.7%	3.9%	12.3%	1.3%	19
NAm+WEu+Oc	49.0%	2.4%	55.0%	4.2%	26.6%	2.1%	23
Latin America	47.9%	2.0%	29.3%	1.9%	21.2%	1.3%	24

Source: Author's own elaboration.

In Appendix A we summarize all variables used in our tests, along with a brief methodological description and its source. In Appendix B we display a table with summary statistics considering only the 109 countries used for econometric regressions.

On some specific econometric questions that may arise, next, we try to clarify how we see and deal with issues like inaccuracy in the charity data, collinearity and endogeneity.

Concerning the inaccuracy in the dependent variable they are not really a problem, or would be impossible to solve anyway. It happens because our charity data are constituted of rounded number, for example: 54% instead of 54.2% or 54.23%. Since these data are rounded in a consistent fashion it does not imply in any bias, though does generate a bigger variance of the parameters if compared with an (ideal) data full of decimals. Additionally, unless we were the original source of the surveys, every external database is in some extent rounded, differing only in degree (as are all our non-discrete explanatory variables).

Respect to collinearity in the explanatory variables, it is a common issue arising from all cross-country studies making use of economic variables since they are always in some sort intrinsically correlated, as education and income, income growth and unemployment rate, and so on. It means that unless we abstain from the use of a full range of controls it is an issue impossible to solve in its plenitude, and in spite of generating a bigger variance of the estimators it is not a source of bias. In what concerns endogeneity or any potential loop of causality, i.e. the level of charity causing one of the explanatory variables, we think charity is still not a leading force (unfortunately, in our opinion) for the change in government expen-

diture or for any institutional rearrangement, nor big enough to influence the level of income and education.

At last, we believe in the idea that the lack of a perfect method of estimation should not prevent us from carrying out certain tests, since the scientific method applied to social sciences (and specifically to forecast individual behavior) is always subject to inherent methodological difficulties.

4 Econometric Results

In Table 2 we present a SURE (seemingly unrelated regressions equations) model regressing the three charity ratios released by CAF on the same set of independent variables. In columns (1) to (3) we include all the economic, institutional and demographic variables displayed in Appendix A. These estimated parameters are the same as if we had estimated them separately by OLS. In columns (4) to (6) we perform the same regression including regional dummies in order to control for any unobservable heterogeneity not included in the full set of variables. In columns (7) to (9) results came from a two-step estimation procedure: first selecting the independent variables using a stepwise method (we apply a removal method which excludes variables with significance level below 30%, in order to be conservative) and then estimating a SURE with these variables, which provides different results if compared to an individual OLS estimation. For this last procedure, we keep coupled variables such as *gout* – *gout_perceived* and *income_pc* – *income_pc_fair* trying to avoid further distortions when comparing parameters from full specifications.

As we can notice, theory fits data in some way. In all estimations *population* has a negative and significant (at a 10% significance level at least) effect on charity, proving the free-ride effect. Also, while *density* is statistically irrelevant, the negative effect of *urban* over *ch_time* may come from the fact that life in cities makes time scarcer.

On the *income_pc* variable, one should be cautious before taking conclusions, since this variable is often strongly correlated to others in the dataset (from age profile and education to institutional dummies and religion), which can capture its effect. At first, it seems we have a striking result that per capita income explains *ch_money* only in the stepwise specification (column 8), conflicting with the literature. We conjecture that it happens because in predominantly rich societies people do not live close to poverty and so do not do well *a priori*. Notwithstanding, when analyzed together with *income_pc_fair* we find that an increasing level of inequality (measured by GINI index) boost the assistance to strangers. Thus, we can state income is relevant for charity as long as there are social injustices to redress.

The age variables had the expected results, reverberating budget and time constraints: youngsters (*sh_younger*) are more prone to volunteer time than to do-

nate money, while elder people (*sh_older*) seems to abandon charitable habits in all senses but especially on money – a flat income perspective could be the key behind this phenomenon.

In the case of *unemployment* we notice a negative effect over *ch_money*, which may take account of an income effect, i.e. if an individual is short of money (due to its unemployment status) it might save resources previously directed to charity. Although, we check a positive effect on *ch_stranger*, which we suppose could emerge from a kind of identification in which people help others in need/disgrace foreseeing themselves could be in the same situation in the future, and if so would like to count on it. This explanation has an analogous in the literature, as Freeman (1997) wrote about the mother who works voluntarily for the Cub Scouts believing that in the future other mothers would do the same for her children.

Meanwhile, the *gdp_growth* variable (unprecedented in the charity literature) showed just a minor positive effect over *ch_time*. It frustrated our expectations of a kind of permanent income effect whether people were expected to donate more in cash under “good mood” and optimistic perspectives on the future.

One of our main questions presents a mild convincing result: government expenditure in health and education (*gout*) crowd-out money donations only at a 15% confidence level. In quantitative terms, we found that if government decreases public expenditure in 1 p.p. the percentage of people who donates money may increase by 1.27-1.32 p.p, considering specifications (2), (5) and (8). So – even ignoring all the unknown information about how much donators contributed to charity and how much they would do after a forced change in *gout* – we can presume that when government goes out of people's lives it encourages charity.

On the other hand, perception of government expenditure (*gout_perceived*) seems to compensate this effect partially, i.e. if people perceive government as honest, they may complement public contribution, attesting for the positive signaling effect of government in boosting charity. Another interesting result concerns the negative impact of corruption at the public sector on *ch_stranger* regressions, i.e. the bigger the corruption (hence the smaller *gout_perceived*) the less people help others randomly. We suggest that in societies with high levels of corruption (*ceteris paribus* for all the other variables) people extrapolate their mistrust in government to other spheres of society, being afraid their money and effort will be subject to embezzlement.

The role of *religious* is not homogeneous since it appears to reduce *ch_time* while *catholic* have a positive impact over *ch_money*, counterbalancing a negative effect of *christian* in general, i.e. Protestantism and other non-Catholic sects seem to reduce the aggregate level of money donation. On the other hand, we notice that Christianity in general increases the level of *ch_time* and *ch_stranger* with respect to other religions.

Surprisingly, the level of *human_capital* measured as the expected years of schooling is only slightly positive in explaining *ch_time* in the model with fewer variables (column 9). This result goes against the theoretical literature on charity in its 'altruistic branch' which predicts qualified workers would volunteer less due to the high value of their labour (salaries or opportunity cost). In the meantime, it favors the empirical literature in which was found a positive effect of education on the warm-glow and other egoistic motivations.

The pure institutional dummies- *common_law* and *communist*- worked as predicted: charity and volunteering are consistently bigger in British tradition countries (compared to those under civil law or order legal systems), while it is compromised in former and current communists in its non-monetary forms (*ch_stranger* and *ch_time*).

Table 2- Results of SURE models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	SURE			SURE			SURE		
VARIABLES	ch_stranger	ch_money	ch_time	ch_stranger	ch_money	ch_time	ch_stranger	ch_money	ch_time
govt	0.101 (0.576)	-1.318 (0.865)	-0.494 (0.489)	-0.656 (0.558)	-1.282 (0.851)	-0.0738 (0.472)	-0.0501 (0.573)	-1.269 (0.862)	-0.580 (0.486)
govt_perceived	1.401* (0.793)	4.210*** (1.191)	0.632 (0.673)	1.749** (0.772)	3.101*** (1.177)	0.238 (0.653)	1.813** (0.732)	3.610*** (1.127)	0.778 (0.652)
income_pc	7.712** (3.558)	2.311 (5.348)	0.795 (3.021)	5.746* (3.380)	0.00801 (5.155)	0.822 (2.858)	7.017** (3.185)	0.0379 (4.983)	0.0710 (2.871)
income_pc_fair	-211.7** (104.5)	18.66 (157.0)	76.32 (88.69)	-165.7* (98.85)	41.16 (150.8)	50.43 (83.60)	-204.0** (95.75)	94.47 (147.5)	93.28 (85.51)
urban_slums	-0.0251 (0.100)	-0.246 (0.151)	-0.0340 (0.0851)	-0.0753 (0.105)	-0.196 (0.159)	-0.130 (0.0884)	-0.287** (0.139)		
unemployment	0.138** (0.0698)	-0.205* (0.105)	-0.0526 (0.0593)	0.0819 (0.0729)	-0.149 (0.111)	-0.116* (0.0617)	0.177*** (0.0578)	-0.230*** (0.0884)	
gdp_growth	0.702 (0.456)	0.141 (0.686)	0.688* (0.388)	0.682 (0.429)	0.0259 (0.655)	0.642* (0.363)	0.627 (0.441)		0.692* (0.370)
sh_younger	0.226 (0.268)	-0.422 (0.402)	0.401* (0.227)	-0.0769 (0.280)	-0.815* (0.427)	0.517** (0.237)			0.318 (0.197)
sh_older	-0.771* (0.455)	-1.457** (0.684)	-0.653* (0.386)	-0.909** (0.438)	-1.692** (0.668)	-0.923** (0.371)	-0.959*** (0.301)	-1.036** (0.454)	-0.684* (0.365)
population	-0.000132** (5.72e-05)	-0.000170** (8.60e-05)	-0.000146*** (4.85e-05)	-0.000105* (5.64e-05)	-0.000206** (8.60e-05)	-0.000161*** (4.77e-05)	-0.000127** (5.47e-05)	-0.000148* (7.91e-05)	-0.000145*** (4.82e-05)
urban	-0.0490 (0.0661)	-0.0301 (0.0993)	-0.108* (0.0561)	-0.0907 (0.0636)	0.0175 (0.0971)	-0.0600 (0.0538)			-0.101* (0.0517)
density	-0.0149 (0.0496)	0.102 (0.0745)	0.0106 (0.0421)	0.0242 (0.0474)	0.0666 (0.0724)	-0.0226 (0.0401)			
human_capital	0.00336 (0.00616)	-0.00517 (0.00927)	0.00739 (0.00523)	0.00355 (0.00591)	-0.00683 (0.00901)	0.00732 (0.00500)			0.00796* (0.00477)
religious	-0.103 (0.115)	0.0986 (0.172)	-0.363*** (0.0972)	-0.0884 (0.117)	0.113 (0.179)	-0.262*** (0.0991)			-0.346*** (0.0900)
christian	0.0873** (0.0378)	-0.0728 (0.0568)	0.0947*** (0.0321)	0.0695 (0.0458)	-0.0539 (0.0698)	0.0705* (0.0387)	0.0603** (0.0278)	-0.0982* (0.0538)	0.0739*** (0.0243)
catholic	-0.0323 (0.0378)	0.113** (0.0568)	-0.0268 (0.0321)	-0.0213 (0.0369)	0.0880 (0.0562)	-0.00443 (0.0312)		0.142*** (0.0539)	
common_law	0.0760** (0.0336)	0.101** (0.0505)	0.0661** (0.0285)	0.0836*** (0.0314)	0.0896* (0.0479)	0.0601** (0.0266)	0.0843** (0.0328)	0.113** (0.0496)	0.0735*** (0.0280)
communist	-0.0641** (0.0296)	-0.0410 (0.0445)	-0.0452* (0.0252)	-0.0326 (0.0375)	0.0623 (0.0572)	-0.0888*** (0.0317)	-0.0466* (0.0246)	-0.0483 (0.0365)	-0.0408* (0.0243)
constant	0.386** (0.191)	0.501* (0.287)	0.378** (0.162)	0.496*** (0.185)	0.603** (0.282)	0.385** (0.157)	0.377*** (0.0488)	0.410*** (0.0680)	0.371** (0.151)
Regional Dummies	No	No	No	Yes	Yes	Yes	No	No	No
Observations	109	109	109	109	109	109	109	109	109
R-squared	0.507	0.570	0.462	0.584	0.626	0.549	0.492	0.553	0.454

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Source: Author's own elaboration, based on econometric results using Stata 11.

As expected, the inclusion of regional controls jeopardized the relevance of some institutional variables as religion (*catholic* and *christian*) and economic system (*communist*). This outcome was anticipated by the existence of institutional clusters as the Islamic religion in Northern Africa and Middle East, Catholicism in Latin America and former communist countries in Eastern Europe and Central Asia.

Considering results altogether, our estimations are robust to variable selection and the inclusion of regional variables, supporting economic intuitions. We also highlight the explanatory power of regressions, with R-squared lying between 45% and 63% and being especially high for the regressions on money donations (always above 55%). The later outcome confirms our choice of not restricting the analysis to the 'help a stranger' variable and letting data say what matters for each kind of charity. Also, variables are jointly significant as all regressions perform well in overall significance tests (p-value of 0.0% in Chi-squared tests).

In Chart 4 we report a further robustness test by comparing significance levels from full regressions estimated by SURE, OLS and Fractional Logit (following the GLM method proposed by Papke and Wooldridge, 1996) using robust standard errors for all of them. In this chart we can compare how similar are the results obtained by these different methods with respect to the relevance of the variables. Observing the estimations presented in the Appendix C, we notice that all relevant variables keep their signs⁵ differing only in statistical relevance, which makes our P-value exercise much more straightforward to test robustness. It is also important to stress that SURE estimation will be always more efficient than OLS or Fractional Logit models because it considers additional information coming from all kinds of charity, so we claim its results are the more accurate.

5 In order to compare parameters in their quantitative sense we need to choose an arbitrary point in the case of Fractional Logit. This happens because marginal effects are not uniform in a Logistic distribution, depending on the values assumed by the explanatory variables. By electing a 'fair point' in the distribution, we took the median observation in our sample (the 109 regressed countries) for continuous variables and in the case of dummy variables we took the most frequent observation: zero (i.e. non-former/current communist nor common law countries).

Chart 4 – Variables' significance under different econometric models

Significance level below 10% for different estimation methods									
	ch stranger			ch money			ch time		
	SURE	OLS	FL (Mg)	SURE	OLS	FL (Mg)	SURE	OLS	FL (Mg)
govt	-	-	-	-	-	-	-	-	-
govt_perceived	7,7%	-	7,4%	0,0%	0,2%	0,3%	-	-	-
income_pc	3,0%	1,2%	0,5%	-	-	-	-	-	-
income_pc_fair	4,3%	1,3%	0,6%	-	-	-	-	-	-
urban_slums	-	-	-	-	9,6%	9,7%	-	-	-
unemployment	4,8%	-	-	5,0%	3,1%	1,4%	-	-	-
gdp_growth	-	-	7,9%	-	-	-	7,6%	5,3%	3,5%
sh_younger	-	-	-	-	-	-	7,7%	6,3%	3,0%
sh_older	9,0%	9,0%	6,2%	3,3%	7,6%	9,7%	9,1%	8,6%	-
population	2,1%	0,6%	0,1%	4,8%	2,0%	0,2%	0,3%	0,0%	0,4%
urban	-	-	-	-	-	-	5,4%	9,5%	4,4%
density	-	-	-	-	-	-	-	-	-
human_capital	-	-	-	-	-	-	-	-	-
religious	-	-	-	-	-	-	0,0%	0,1%	0,0%
christian	2,1%	4,5%	3,4%	-	-	-	0,3%	0,8%	1,0%
catholic	-	-	-	4,7%	5,0%	0,4%	-	-	-
common_law	2,4%	6,4%	3,8%	4,6%	6,8%	4,3%	2,0%	2,2%	3,4%
communist	3,1%	7,3%	4,5%	-	-	-	7,2%	-	6,3%

Source: Author's own elaboration, based on econometric results using Stata 11.

As we can find, results do not change significantly except from some variables that lost their relevance as (for instance) *unemployment* in the *ch_stranger* regression. In general, we can affirm results are robust, now also with respect to the estimation method.

5 Final Considerations

It is important to point out the main policy implications of our results, considering that charity is a solid habit resulting in a consistent way of supplying social protection even in crisis moments.

Corruption exerts a negative effect on charity when considering the perception of government expenditure in public goods. It implies that government could boost private charity if it increases people's perception of its expenditure, by both increasing marketing campaigns or facilitating transparency, i.e. if governments were able to increase transparency maybe people would be encouraged to donate more to causes that are signaled as good.

At the same time, in some cases, to diminish public expenditure can have a substitution effect coming from families' behavior. At a first sight, it might not look interesting for governments to reduce its power over budget and so its political influence, but in the long run and mainly when facing a crisis/uncertain scenario it would be useful in avoiding or at least mitigating the social (and consequently electoral) impact of crisis.

Then again, our results emphasize the role of institutions in determining charity behavior. It means that ethics may constraint policies in some way, for example: in order to increase charity, Brazil's government cannot simply impose a common law system from the top without changing society, nor Saudi Arabia can motivate Catholicism in a major Islamic society, because ultimately institutions are endogenous. So, if institutions are central in determining the strength of social networks, they are also in restraining governments' actions in the short run.

Bearing in mind the literature produced on charity, our results and their policy implications, we can indeed affirm charity is not only a multidimensional issue, but also that it depends on uncontrolled variables almost impossible to shape by policy makers, that become inept. For the time being, some factors such as transparency and governmental expenditure (and its counterpart, the tax burden) are in fact subject to change and show a very positive outcome in encouraging charitable habits.

Normatively speaking, we hope that civil society (and so voters) supports the charitable solution against government intervention, helping politicians in solving their trade-off. By doing so, they would be motivating goodness and the supply of social protection in a more libertarian and spontaneous fashion.

References

ABADIE, A.; GAY, S. The impact of presumed consent legislation on cadaveric organ donation: a cross-country study. *Journal of Health Economics*, v. 25, n. 4, p. 599-620, July 2006.

ACKERMAN, D.; AUTEN, G. Floors, ceilings and opening the door for a non-itemizer deduction. *National Tax Journal*, v. 59, n. 3, p. 509-530, Sept. 2006.

ANDREONI, J. Charitable giving. In: DURLAUF, S. N.; BLUME, L. E. (Ed.). *The New Palgrave dictionary of economics*. 2. ed. New York: Palgrave Macmillan, 2008. Available in: <http://www.dictionaryofeconomics.com/article?id=pde2008_C000590>. Access in: 18 Oct. 2016.

ANDREONI, J. *Economics of philanthropy*. In: SMELTSER, N.; BALTES, P. (Ed.). *International encyclopedia of social and behavioral sciences*. Amsterdam: Elsevier, 2001. p.11369-11376.

_____. Giving with impure altruism: applications to charity and Ricardian equivalence. *Journal of Political Economy*, v. 97, n. 6, p. 1447-1458, Dec. 1989.

_____. Impure altruism and donations to public goods: a theory of warm-glow giving. *The Economic Journal*, v. 100, n. 401, p.464-477, June 1990.

_____. Privately provided public goods in a large economy: the limits of altruism. *Journal of Public Economics*, v. 35, n. 1, p. 57-73, 1988.

ANDREONI, J.; GALE, W. G.; SCHOLTZ, J. K. *Charitable contributions of time and money*. Madison: University of Wisconsin-Madison, July 1996. Mimeo.

ARIELY, D.; BRACHA, A.; MEIER, S. Doing good or doing well? Image motivation and monetary incentives in behaving prosocially. *American Economic Review*, v. 99, n. 1, p. 544-555, 2009.

BECKER, G.S. A theory of social interactions. *Journal of Political Economy*, v. 82, n. 6, p. 1063-1093, 1974.

CENTRAL INTELLIGENCE AGENCY. *The world factbook*. Available in: <<https://www.cia.gov/library/publications/the-world-factbook>>. Access in: 18 Oct. 2016.

CHARITY AID FOUNDATION. The world giving index. 2010. Available in: <<https://www.cafonline.org/about-us/publications/2010-publications/world-giving-index>>. Access in: 18 Oct. 2016.

DAVIES, R. *Public good by private means: how philanthropy shapes Britain*. London: Alliance Publishing Trust, 2016.

DUNCAN, B. Modeling charitable contributions of time and money. *Journal of Public Economics*, v. 72, n. 2, p.213-242, 1999.

FACT MONSTER. *Communist countries, past and present*. Sandbox Networks, publishing as Fact Monster. Available in: <<http://www.factmonster.com/ipka/A0933874.html>>. Access in: 18 Oct. 2016.

FREEMAN, R. B. Working for nothing: the supply of volunteer labor. *Journal of Labor Economics*, v. 15, n. 1 (part.2), p. S140-S166, 1997.

GLAZER, A.; KONRAD, K. A. A signaling explanation for charity. *American Economic Review*, v. 86, n. 4, p. 1019-1028, Sept. 1996.

HARPER, F. A. *The writings of F. A. Harper*. Menlo Park, CA: Institute for Humane Studies, 1978. 2 v.

INTERNATIONAL MONETARY FUND. *World economic outlook (WEO)*. Available in: <<http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/index.aspx>>. Access in: 18 Oct. 2016.

KAGEYAMA, J. *Why do women in former communist countries: look unhappy? A demographic perspective*. Munich: Max-Planck-Gesellschaft, Nov. 2009. (MPIDR Working Paper WP 2009-032).

LIST, J. A. *et al.* Toward an understanding of the economics of charity: evidence from a field experiment. *Quarterly Journal of Economics*, v. 121, n. 2, p. 747-782, 2006.

OLSON, M. *The logic of collective action: public goods and the theory of groups*. Cambridge: Harvard University Press, 1971.

PANDE, R.; UDRY, C. *Institutions and development: a view from below*. Yale: Yale University. Economic Growth Center, Nov. 2005. (Discussion Paper, n. 928).

PAPKE, L. E.; WOOLDRIDGE, J. M. Econometric methods for fractional response variables with an application to 401(k) plan participation rates. *Journal of Applied Econometrics*, v. 11, n. 6, p. 619-632, 1996.

PHAROAH, C; TANNER, S. Trends in charitable giving. *Fiscal Studies*, v. 18, n. 4, p. 427-443, 1997.

SAAD, L. *Despite economy, charitable donors, volunteers keep giving*. Washington, DC: Gallup, 19 Dec. 2008. Available in: <<http://www.gallup.com/poll/113497/despite-economy-charitable-donors-volunteers-keep-giving.aspx>>. Access in: 18 Oct. 2016.

SHEPPARD, I. *Report of the inquiry into the definition of charities and related organisations*. Canberra: The Treasury, Jun. 2001.

TRANSPARENCY INTERNATIONAL. *Corruption perceptions index*. 2010. Available in: <<http://www.transparency.org/cpi2010>>. Access in: 18 Out. 2016.

UNITED NATIONS DEVELOPMENT PROGRAMME. *Human Development Reports (HDR)*. Available in: <<http://hdr.undp.org/en>>. Access in: 18 Oct. 2016.

UNIVERSITY OF SHEFFIELD. *Worldmapper – The World as You've Never Seen it Before*. Available in: <<http://www.worldmapper.org>>. Access in: 18 Oct. 2016.

WARR, P. G. Pareto optimal redistribution and private charity. *Journal of Public Economics*, v. 19, n. 1, p.131-138, 1982.

WORLD BANK. *World Bank Open Data*. Available in: <<http://data.worldbank.org>>. Access in: 18 Oct. 2016.

Appendix A - Summary of Data and its Methodology

Name	Variable	Description	Source
CHARITY			
ch_money	% of people who donated money	% of urban population, in March 2010	CAF
ch_time	% of people who worked voluntarily		
ch_stranger	% of people who helped a stranger		
ECONOMIC			
gov_health	% of public expenditure on health	% of GDP, average from 2006-2010	World Bank
gov_educ	% of public expenditure on education		
govt	gov_health+gov_educ		
corruption	perceived level of corruption	Corruption Perception Index (CPI 2010) in the public sector in a 0-10 scale, being 0 the more corrupted	Transparency International
govt_perceived	govt*corruption/10	Perceived level of government expenditure	-
income_pc	per capita income (ppp)	Per capita Gross Domestic Product (GDP), by purchase power parity in 2010.	IMF (WEO)
inequality	inequality index	Gini index of income inequality	UNDP and CIA Factbook when not available

to be continued...

conclusion.

Name	Variable	Description	Source
income_pc_fair	income_pc/inequality	Per capita income adjusted by inequality	-
urban_slums	urban poverty	% of urban population living in slums	World Mapper
unemployment	unemployment rate	% of total labour force unemployed, average from 2006-2010	IMF (WEO)
		% of total labour force unemployed (last release), used when IMF (WEO) series is not available.	CIA Factbook
gdp_growth	GDP growth	GDP growth in constant prices, average % from 2006-2010.	IMF (WEO)

DEMOGRAPHIC

sh_younger	% of young people	% of population below 14 years old.	CIA Factbook
sh_older	% of old people	% of population above 65 years old.	
area	land area	Total land area in km ² , in 2010.	World Bank
population	total population	Total population in millions, in 2010.	IMF (WEO)
urban	% of urban population	% of total population living in urban areas	World Bank
density	population/area	Millions of people/km ²	-

INSTITUCIONAL

human_ capital	potential human capital	Expected years of schooling of children, in 2010	UNDP
religious	% of religious people	share of population identified with: any religion, Christianity and Catholicism*	University of Sheffield (World Mapper)
christian	% of Christian people		
catholic	% of Catholic people		
common_ law	Dummy = 1 if has a common law judicial system.		Cia Factbook
commu- nist	Dummy = 1 if is/was a self-declared Leninist communist country.		Fact Monster

REGIONAL

Regional dummies for: North America + Western/Southern Europe + Oceania (NA+WEu+Oc), Latin America, Arab World, Sub-Saharan Africa, Central/Eastern Europe + Central Asia (CEEu+CA), Southern Asia and Eastern Asia.

Source: Author's own elaboration.

Note: *We considered the percentages of Serbia as being the data from Serbia & Montenegro together, which is not a big adaptation considering that the new state of Serbia contained more than 90% of the population of the extinct country (according to CIA Factbook).

Appendix B - Summary Statistics of Regressed Countries

	Variable	Obs	Mean	Std. Dev	Min	Max
Charity	ch_stranger	109	44.0%	12.4%	13.0%	76.0%
	ch_money	109	30.3%	20.0%	4.0%	83.0%
	ch_time	109	19.5%	10.1%	2.0%	47.0%
Economic	govt	109	8.5%	3.1%	3.1%	15.8%
	corruption	109	4.35	2.19	2.00	9.30
	income_pc	109	15.22k	14.51k	0.39k	81.38k
	inequality	109	39.42	9.64	24.70	74.30
	urban_slums	109	13.6%	12.0%	0.1%	54.7%
	unemployment	109	13.2%	16.2%	0.9%	95.0%
	gdp_growth	109	3.7%	2.7%	-2.0%	16.9%
Demographic	sh_younger	109	25.4%	9.8%	13.1%	47.3%
	sh_older	109	9.7%	5.7%	2.5%	22.9%
	population	109	54.30	175.69	0.32	1341.41
	urban	109	60.6%	20.2%	13.6%	97.4%
	density	109	0.1244	0.1922	0.0018	1.3125
Institutional	human_capital	109	13.02	3.04	4.70	20.50
	religious	109	91.4%	10.5%	50.2%	99.9%
	christian	109	57.3%	37.4%	0.2%	98.1%
	catholic	109	30.0%	34.4%	0.0%	96.9%
	common_law	109	10.1%	-	-	-
	communist	109	27.5%	-	-	-
Regional	NAm+WEu+Oc	109	21.1%	-	-	-
	Latin America	109	18.3%	-	-	-
	Arab World	109	8.3%	-	-	-
	Sub-Saharan Africa	109	15.6%	-	-	-
	CEEu+CA	109	22.9%	-	-	-
	Southern Asia	109	10.1%	-	-	-
	Eastern Asia	109	3.7%	-	-	-

Source: Author's own elaboration, based on the sample of 109 countries used for econometric regressions.

Appendix C - Models Comparison

	(1)	(2)	(3)	(10)	(11)	(12)	(13)	(14)	(15)
	SURE			OLS			Fractional Logit (marginal effects)		
VARIABLES	ch_stranger	ch_money	ch_time	ch_stranger	ch_money	ch_time	ch_stranger	ch_money	ch_time
govt	0.101 (0.576)	-1.318 (0.865)	-0.494 (0.489)	0.101 (0.735)	-1.318 (0.918)	-0.494 (0.671)	0.098 (0.697)	-1.075 (0.889)	-0.495 (0.616)
govt_perceived	1.401* (0.793)	4.210*** (1.191)	0.632 (0.673)	1.401 (0.859)	4.210*** (1.332)	0.632 (0.821)	1.454* (0.813)	3.773*** (1.275)	0.623 (0.721)
income_pc	7.712** (3.558)	2.311 (5.348)	0.795 (3.021)	7.712** (3.008)	2.311 (6.134)	0.795 (3.581)	7.990*** (2.857)	1.709 (4.911)	1.011 (2.995)
income_pc_fair	-211.7** (104.5)	18.66 (157.0)	76.32 (88.69)	-211.7** (83.45)	18.66 (187.8)	76.32 (97.29)	-219.5*** (79.5)	13.2 (149.8)	59.0 (81.5)
urban_slums	-0.0251 (0.100)	-0.246 (0.151)	-0.0340 (0.0851)	-0.0251 (0.120)	-0.246* (0.146)	-0.0340 (0.0770)	-0.025 (0.112)	-0.241* (0.145)	-0.029 (0.074)
unemployment	0.138** (0.0698)	-0.205* (0.105)	-0.0526 (0.0593)	0.138 (0.103)	-0.205** (0.0936)	-0.0526 (0.0779)	0.139 (0.096)	-0.274** (0.112)	-0.064 (0.072)
gdp_growth	0.702 (0.456)	0.141 (0.686)	0.688* (0.388)	0.702 (0.436)	0.141 (0.483)	0.688* (0.351)	0.725* (0.413)	0.160 (0.450)	0.687** (0.325)
sh_younger	0.226 (0.268)	-0.422 (0.402)	0.401* (0.227)	0.226 (0.270)	-0.422 (0.444)	0.401* (0.213)	0.228 (0.250)	-0.428 (0.446)	0.430** (0.198)
sh_older	-0.771* (0.455)	-1.457** (0.684)	-0.653* (0.386)	-0.771* (0.450)	-1.457* (0.811)	-0.653* (0.376)	-0.812* (0.435)	-1.325* (0.799)	-0.609 (0.379)
population	-0.000132** (5.72e-05)	-0.000170** (8.60e-05)	-0.000146*** (4.85e-05)	-0.000132*** (4.70e-05)	-0.000170** (7.16e-05)	-0.000146*** (3.90e-05)	-0.000147*** (4.00e-05)	-0.000205*** (7.00e-05)	-0.000158*** (5.00e-05)
urban	-0.0490 (0.0661)	-0.0301 (0.0993)	-0.108* (0.0561)	-0.0490 (0.0733)	-0.0301 (0.111)	-0.108* (0.0642)	-0.0513 (0.0686)	-0.0329 (0.0996)	-0.1230** (0.0611)
density	-0.0149 (0.0496)	0.102 (0.0745)	0.0106 (0.0421)	-0.0149 (0.0426)	0.102 (0.147)	0.0106 (0.0561)	-0.0148 (0.0410)	0.0879 (0.1070)	0.0204 (0.0551)
human_capital	0.00336 (0.00616)	-0.00517 (0.00927)	0.00739 (0.00523)	0.00336 (0.00666)	-0.00517 (0.00813)	0.00739 (0.00762)	0.0036 (0.0062)	-0.0054 (0.0078)	0.0082 (0.0067)
religious	-0.103 (0.115)	0.0986 (0.172)	-0.363*** (0.0972)	-0.103 (0.103)	0.0986 (0.175)	-0.363*** (0.105)	-0.101 (0.100)	0.1375 (0.174)	-0.3802*** (0.108)
christian	0.0873** (0.0378)	-0.0728 (0.0568)	0.0947*** (0.0321)	0.0873** (0.0430)	-0.0728 (0.0719)	0.0947*** (0.0347)	0.0881** (0.0416)	-0.0896 (0.0619)	0.0930*** (0.0364)
catholic	-0.0323 (0.0378)	0.113** (0.0568)	-0.0268 (0.0321)	-0.0323 (0.0371)	0.113** (0.0567)	-0.0268 (0.0299)	-0.0323 (0.0357)	0.1254*** (0.0441)	-0.0228 (0.0296)
common_law	0.0760** (0.0336)	0.101** (0.0505)	0.0661** (0.0285)	0.0760* (0.0405)	0.101* (0.0545)	0.0661** (0.0284)	0.0780** (0.0376)	0.1039** (0.0514)	0.0563** (0.0266)
communist	-0.0641** (0.0296)	-0.0410 (0.0445)	-0.0452* (0.0252)	-0.0641* (0.0354)	-0.0410 (0.0568)	-0.0452 (0.0295)	-0.0661** (0.0329)	-0.0461 (0.0490)	-0.0465* (0.0251)
constant	0.386** (0.191)	0.501* (0.287)	0.378** (0.162)	0.386* (0.199)	0.501** (0.241)	0.378** (0.178)			
Observations	109	109	109	109	109	109	109	109	109
R-squared (●)	0.507	0.570	0.462	0.507	0.570	0.462	0.500	0.569	0.440

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

(●) for Fractional Logit we estimate a pseudo R-squared based on the Deviation statistic.

Source: Author's own elaboration, based on econometric results using Stata 11.

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