GIVE AND IT WILL BE GIVEN TO YOU. ECONOMIC APPROACH

by

Gorobets Vitaliy

A thesis submitted in partial fulfillment of
the requirements for the degree of

MA in Economic Analysis

Kyiv School of Economics

2011

Thesis Supervisor: _____Professor Coupé Tom

Approved by _____
Head of the KSE Defense Committee, Professor Wolfram Schrettl

_____

_____

_____

Date _____

Kyiv School of Economics

Abstract

GIVE AND IT WILL BE GIVEN TO YOU. ECONOMIC APPROACH

by Gorobets Vitaliy

Thesis Supervisor: Professor Coupé Tom

Each of us heard the statement "Give and it will be given to you". But we do not really understand what does it mean, what we should give, and what will be given to us. The existing economic literature on the important evolutionary paradox – altruism, provides wide evidence of emotional, social, and reputational return to altruistic and prosocial behavior among individuals, and economic pay off among sellers with altruistic concern. Taking this into account, in our work, we investigate the existence of economic pay off, in the form of enhancement in personal earnings, due to altruistic and prosocial actions. We model this relationship with the help of signaling function, which reveals positive personal characteristics to society, what can be beneficial not only in terms of social or emotional reward, but also in terms of economic gain.

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGMENTS

The author wishes to express his special gratitude to Professor Tom Coupé for his tremendous contribution to our work and invariable willingness to resolve complicated issues.
The same gratitude I want to express to my class mate Volodymyr Baranovskyi for his patient, indispensable help and advice with mathematical issues. Special thanks to Administrative Director, Ivanna Kurtyk, for inspiration.

I am also grateful for the time and the effort spent, by all professors of Kyiv School of Economics, for equipping us with necessary knowledge and tools, plus useful comments during the stage of the thesis compilation.

I appreciate and grateful to Dr. Segura for his experience and knowledge brilliantly transmitted to his students; for the original, interesting and effective approach in teaching I wish to thank to such Professors as Pavlo Prokopovych, Valentin Zelenyuk, Aaron Mehrotra, and Alexei Goriaev.

I also want to thank to all members of KSE community and my dear classmates for happy time spent together.

Thanks to my family for support in my decisions.
"The only way to get smarter is by playing with a smarter opponent."
Fundamentals of chess (1885)

Chapter 1

INTRODUCTION

"How selfish soever man be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it."

Adam Smith, The Theory of Moral Sentiments (1969, p.47)

Altruism and responsibility towards ones' environment are topics which, in one form or another, have interested philosophers, economists, sociologists, psychologists, and others for many generations. These concepts are something without which humans, as specie, would not be able to develop and even to survive. Due to the decrepit state of separate individual in front of the face of surrounding world, especially during the ancient days, external support was and stays crucial for proliferation. Therefore our ancestors were destined to form small and later, constantly growing groups to protect themselves and ensure their survival. Nevertheless, the flourishing life of a group was impossible if only egoistic motives were assigned primary importance. The intention, evoked by feelings or duty, to help and protect relatives, friends or just a group member was and keeps staying a decisive element of group's cohesion and identity. As time passed and those tiny unified groups transformed into multinational and million-strong communities, the principles of the surviving strategies and effective development did not change. Likewise altruism and responsibility, not only for yourself but also for an environment and those living in it, still stays a crucial prerequisite for surviving and sustainable development.

As an area of economic research, altruism, defined in this work as sacrificial behavior directed towards helping others, appeared with the availability of numerical data on individuals who spend their money, time, and effort for charitable or community/prosocial work. Immediately it became an important topic of study in the areas of public theory, political economics, rational choice and utility. For example, the concept of "utility" means that people are rational and act to maximize their own economic utility. But Simon (1993) states that "utility" is not clearly defined, because people do not always act rationally with the only purpose to maximize it. Irrationality appears exactly in the case of altruism (Posner and Landers 1978). Such irrationality must be counted in the economic modeling for the advancement purposes of economic knowledge and application. For many different personal reasons some people are ready to loose or sacrifice the portion of their own "utility" for the benefit of a neighbor or even a stranger. During all generations such behavior is considered as noble. Nevertheless, it is stupid from the point of view of economics and utility, because according to economic models, if one gives something away, one either loses it or gains in the form of profit. So, what one loses or gains if one gives? If we consider production or some business than economic entity will loose if it will give a portion of scarce resources and gain nothing if these resources were given to charity or else. In interpersonal relations a "profit" from altruism is supported by the evidence that altruistic behavior increases not only utility of others, but also happiness of altruistic person (Anik et al., 2009). People could act altruistically being motivated by maximization of the welfare of others increasing their own happiness. At the same time, altruism can be in the conditional and unconditional forms, or "pure altruism" when a person is ready to benefit the others without any thought of expected return (Konow, 2009). Altruistic behavior can have different public and private, intrinsic and extrinsic motives (Ariely, Bracha and Meier, 2007). Public motives can be realized in the form of desire to increase a status or an attention towards own personality inside of some

group. Private motives realized when a person wants to get benefits out of prosocial behavior in the form of developing some skills or get new experience. For example, a person from Ukraine boards a plain and goes to the poor African country with the humanitarian mission, realizing that it would not be a pleasant "safari ride", but excellent opportunity to go through hardships and learn. Intrinsic motives are more connected to the personal characteristics or innate demands, when one feels that it is how it should be and acts altruistically by default. While extrinsic motives, for example, can be fulfilled in the form of a sudden "rescue operation", when a thug gets an old woman's cat from a fire, what is inherent behavior for thug.

Altruistic behavior, expectedly or not, sometimes can be rewarded, especially by the government, in the form of honors or simple tax deductions. Also charitable organizations sometimes produce and give to their donors some kind of material reward in the form of calendars, bracelets or some benefits such as free attendance of seminars and charitable dinners to "reward" for participation and extrinsically motivate givers.

The main purpose of this work is to study econometrically the statement of "Give and it will be given to you" and find the influence of altruistic and prosocial behavior on personal income. This will be accomplished by the introduction of the altruism and prosocial behavior indicators, in the form of dummy variables, into the model of wage determinants (Mincer, 1974).

To model the relationship between individual's altruistic and prosocial behavior and one's changes in earnings I use the findings of some previous literature. One of them consists in the issue that people with altruistic inclinations are considered as more trustworthy (Fehrler, 2010). Trustworthy means reliable. Means one, who had proved his or her reliability over time, and is able to accomplish what have to be done at the exact time and place with negligible probability of failure or deceit. In his paper, Fehrler conducts an experiment to find out if people who donate to charities can be considered as more trustworthy

than those who do not donate. The experiment produced the results that those, who made donations received three times higher contributions from other participants than those who did not donate, which supports the hypothesis that donors are considered as more trustworthy. Such characteristic as trustworthiness is very beneficial for its bearer in modern society, community, workplace, and inside of a family. Dependable person is in demand in every social group. Altruism and prosocial behavior may come out as a good signal of trustworthiness and reliability for towards each social group. Reliable person, by own prosocial or altruistic behavior, will signal to society about own useful characteristics and will definitely obtain social benefits in the form of better employment, profitable contracts, important connections or even fortunate marriage, what in its tern will find its reflection on the personal financial earnings.

Other studies uncover other benefits of altruistic behavior. For example, charitable behavior is considered as a substitute for reputation (Elfenbein, Fisman, and McManus, 2010). The authors of this paper employed the data of 160,000 listings in the world's largest Internet auction (eBay) to study the returns of sellers who have participated in the Giving Works (GW) program and signaled about their participation to customers. They have found that those sellers, who decided to donate some definite part of the revenue to the charity of their choice, were more successful in selling their goods than those who did not participate in GW. Moreover, such participating sellers were considered more reliable by consumers. Reliable is in the way that consumers were sure that such seller has a product of a good quality and will keep obligation of delivery and warranty. GW sellers were given preferences before not participating and even were paid higher prices than usual in some cases when buyers understood that their money will go to charity. Though, not only signaling function can be a link between altruism and income. Thoits and Hewitt (2001) discover the positive influence of prosocial behavior in the form of volunteering work on individual's well-being in the form of life satisfaction, self-esteem, happiness, sense of control over life, physical

health, and reduced depression. Without a doubt all six facets of well-being will lead to better social integration, development of necessary interpersonal and personal skills, and will lead to better quality of life, careers, and higher incomes.

All tools and materials for this analysis will be presented in subsequent chapter. For the beginning, definitions will be given in the Chapter 2, which contains Literature Review section, leading the discussion of altruism in the existing literature, contribution of this work, characteristics of the model in use and income determinants, finally modeling of the link between the altruism and income will be revealed at the end. Chapter 3 will provide the description of the data and the method used for analysis, including possible problems and the way of dealing with them. Chapter 4 contains the results of all estimations, coefficients, and their interpretation. Final remarks about possible estimation problems are also provided in this section. All conclusions made during the analysis and all questions asked will be answered and summarized in the closing Chapter 5.

C h a p t e r 2

LITERATURE REVIEW

Altruism is not … an agreeable ornament to social life, but it will forever be its fundamental basis. How can we really dispense with it?

E. Durkheim, *The division of Labor in Society. (1933, p.228)*

2.1 Overview and Definitions

The discussion and research on altruism, social responsibility, and charity started centuries ago among philosophers and spiritual leaders. Among them are such prominent individuals, who were concerned about this controversial topic, as Plato. In his work "The State", Plato illustrated the importance of altruistic behavior using the example of two groups of people with very long spoons inside of two caves. One entire group is hungry and dying, because there is not enough space for each individual to turn and manipulate the spoon to feed themselves. While inside the other cave, people started to feed each other. Also Kant has been working on developing the "moral imperatives" the purpose of which was achieving harmony in interpersonal relations. Finally, Adam Smith (1969) in his work on the "Theory of the Moral Sentiments" writes about the influence of donations on the economy. Nowadays many economists and scientists from many other disciplines, such as medicine, sociology, philosophy, etc. are studying altruism. This chapter will cover the topics connected to research in this area beginning from the necessary terms definition and overview of the existing literature on the topic related to the current study. The contribution of this work will be discussed further. After that goes the literature related to the empirical part. And concluding section will provide the literature necessary for the establishing and modeling of the link between the altruism and income.

To define the concept of altruism I use Landes (1978), who points out that altruism is a behavior which is not amended and directed towards the family members or charity, moreover it can develop into the act of saving someone's property or life, while taking a big risk for one's own life or property. This definition does not completely reflect the entire sense of the indicator variables (which are fully described in the Data and Methodology section) and concepts that will be used in this work. Therefore, a complementary and more precise definition for the effect under the study contains in the concept of "Prosocial behavior" (Eisenberg and Mussen, 1989), which the authors define as "voluntary actions that are intended to help or benefit another individual or group of individuals". The purpose of this research is to study the direct effect of this prosocial behavior (PB) on the individual's earnings. Later on I will describe in detail why and how PB can influence earnings, but now I state that PB includes mostly activities connected with volunteering and socially beneficial work, while altruism refers more to motivation of an action.

2.2. Theoretical Evidence

The economic literature is based on the assumption of "utility" and "profit", which are treated as the main motives for rational individual. This does not fully reflect the "agents" in economy because people do not always behave rational and act to maximize their utility as is illustrated by their altruistic and/or prosocial actions. Simon (1993) writes that consumers do not shape their preferences in separation from other individuals but do it by considering both widely available information and their public environment. Acting altruistically and prosocially agents sometimes seem to maximize the utility of other agents demanding nothing in return. Of course, it is hard to claim there is absolutely no pay off. Definitely this pay off does not appear in material form in most cases, except sometimes in the form of the gifts, but the social or emotional payoff is always present. By the words of Anik et al. (2009) people who give freely become

happier, and happier people tend to give more to others. It does not mean that unhappy or unsatisfied people do not give; rather that unhappy people by giving can become happier, making a benefit not only to themselves but also to others.

The readiness to take into account others when considering our own interests is intrinsic to humanity. Piliavin and Charng (1990) argue that a normal person discovers a need to participate in social actions that are directed to benefit others or the entire community. Adreoni and Miller (2002) state that such behavior is common and should enter the idea of rationality. These researchers found that it is possible to express altruistic behavior in utility functions with quasi-concave properties.

While prosocial behavior can be beneficial for its practitioner, at least in an emotional way, there are people which might act prosocially, but are disinclined to behave in such way if they are not able to consider their actions in accordance with their own interest. Simpson, Irvin, and Lawrence (2006), found that an individual is more likely to contribute to charities if he or she expects to receive something like small presents and souvenirs back or even larger benefits such as luxury charitable dinners for special guests or even tax deductions from the government. At the other side, some might argue that material rewards can undermine benevolence in the long term. Anik, Aknin, Norton, and Dunn (2009), however, show that advertising the emotional benefits of socially responsible behavior may keep these benefits intact and might motivate people to give more.

In this paper, I investigate how prosocial behavior affects a person's earnings, building on Mincer's (1974) model of wage determinants. Since Mincer (1974) a huge amount of research has been written on factors that affect wages. Among the factors that have been found relevant are: age, race, gender, schooling, education, training, tenure, position occupied, size of the company, personal characteristics, parental background, place of residence and others

(Rogers III and Stratton, 2005). I will contribute to this literature by investigating whether prosocial behavior should be added to this list.

2.3. Model.

Prosocial and altruistic behavior can be interpreted as a "signal" about important characteristics. The first evidence of it is provided by Dewitte and Cremer (2005) in the idea of altruism as costly signaling. Costly signaling means that people who behave altruistically and prosocially incur in some costs, but such behavior serves as an indicator of some important human qualities, which could be very useful in day-to-day interactions, employment, and business. In their work, authors lead two studies which consist of two stages. A first study was made in laboratory conditions while the second one as real life student project. They found that the students who invested more than their fair share did not receive higher than those who invested less or equal amount of the share payoffs, but they were more preferred as the future team members (in 1st study) and received social rewards (2nd study). Millet and Dewitte (2007) by conducting two studies provide evidence of a positive relationship between altruistic behavior and intelligence. The result of the first study showed that those individuals who contributed more to a public good were found more intelligent, which was measured by two measures of general intelligence. And the second study showed that those who tend to value common benefits more than own benefits, scored higher on the general intelligence test. Therefore, "signaling" is the important link between the prosocial and altruistic behavior and expected earnings. Experiments above clearly described the benefits of such behavior in the forms of social recognition (while experimental income did not grow) and higher intelligence. These two factors will obviously play drastic role in the life of each person and will considerably influence individual's earnings in the future.

The second point of such connection is provided by Fehrler (2010) and his experiment. The experiment is simple as that and includes the study of three

participating groups. The first group receives 10 tokens and can give any amount out of this to the second group grounding the decision on either the member of the second group donated to charity or not. The second group member receives 14 tokens and each member of this group has a choice to donate or not to donate to the third group, which is the real charitable organization receiving real money converted out of tokens. The experiment produced the results that those, out of the second group, who made donations received three times higher contributions from the first group participants than those who did not donate, which supports the hypothesis that donors are considered as more trustworthy. By experiment he proves the positive relationship between altruistic behavior and trustworthiness of a person. Trustworthiness defined as a quality, almost virtue, and assigned to the person whom one can place his or her trust and stay sure that this trust will not be betrayed. Person is considered as trustworthy if he or she can act in the way of proving expectations about his or her responsibility. Such individual will keep personal and commercial secrets and this characteristic will definitely be valued in business and by employers. By obtaining the reputation of trustworthy person, one would be exposed to more complex and demanding deals in business or on the job tasks at reduced monitoring costs for employers or partners, what can justify higher wages, promotions, or bonuses. From the works of researchers, mentioned above, it is possible to construct a tangible link from the prosocial behavior to earnings through such connectors as signaling function, which indicates the intelligence and social fitness; and trustworthiness, what is the quality of supreme importance in business and interpersonal relations.

The third point of evidence is a real-life example of the beneficial prosocial behavior described in the work of Elfenbein (2010), who shows that income increases as a result of altruistic behavior revealed by the sellers on the Internet auction "eBay". Sellers who constantly participate in the "Giving Works" program and donate a part of their revenues to charity increase their reputation (trustworthiness in some sense) and receive higher attention, revenues and

positive response rates about their goods in contrast to their non-participating colleagues. One more important study that investigates benefits of prosocial behavior was done by Thoits and Hewitt (2001) and reveals the influence of prosocial behavior on one's health and abilities by discovering the relationships between volunteer work (not participation in volunteering community, but work) and six facets of individual well-being, such as: life satisfaction, self-esteem, happiness, sense of control over life, physical health, and depression. The results of their research show that volunteer work enhances all six facets of individual well-being. They also describe mechanisms of such interaction. Some scholars, for example, stress the point on the beliefs side. By volunteering one feels his or her importance to other people, feels that one "matters". Other scholars state that voluntarism is a role identity that reveals a purpose and meaning in life, which in tern can increase well-being. Possession of such psychological characteristics as happiness, absence of depression, high self-esteem, feeling of control over life and life satisfaction are crucial for each person and will unambiguously lead to success in careers and different areas of life. Direct application of this theory is described by the study of Oswald, Proto, and Sgroi (2009). In their discussion paper these authors concluded that happiness has strong causal effect on labor productivity. Such conclusion was made on the basis of two experiments. The first has about 270 participants and tests in the laboratory the consequences of randomly-assigned happiness. The second experiment in which nearly 180 individuals participated, estimates the results of major life-shocks. In the 1st experiment a rise in happiness leads to increased productivity in paid piece-rate occupation. This effect can be replicated even for smaller sample and found to be significant for both male and female group. Surprisingly the effect shows up in changed output, but not in the quality of work and reveals that happier workers make production levels grow, but their accuracy stays unchanged. In the 2nd experiment participants were asked to fill in the questionnaires and describe their own background. The purpose of it was to find

out who has received a happiness shock from Nature. Similarly as in the 1st experiment, a strong link has been found between productivity and well-being.

2.4. The Problem of Endogeneity.

From the other side prosocial and altruistic behavior can be influenced by the one's earnings. It is reasonable because a person, who has enough resources for himself or herself, is able to contribute more time or effort for helping or donating to others. This point can be supported by the work of Hoffman (2010) where he states that during the Holocaust the richer and more developed countries had many more rescuers than poorer ones. In addition, rich citizen tend to rescue more people than poor citizen. His evidence corresponds to the claim that altruism increases in income, what can produce an upward bias of the estimated coefficients in our analysis. On the contrary the experimental study of Erkal et. al, (2009) provides the result of the two stage experiment. During the first stage participants compete in tournament that determines their earnings. During the second stage they decide of whether they want to share the part of earnings with their group members. The main finding is that those who were ranked first by earnings, was much less likely to give than those who were with the second rank in earnings. Ceruti (2002) experimentally investigates the hypothesis that the rich people are less altruistic than the poor and concludes that poor people with the low mean and high variance of the income random variable tend to preserve the persistent level of altruism in the long run, while for the rich people with the high mean and relatively low variance of the income random variable, the level of altruism drops in the long run. By this experiment he proves the inverse relationship between the degree of altruism and the average income in the long term perspective. Contrary to previous findings is the evidence on the country level. By the words of Materia (2005), the distribution of wealth is directly associated with the level of the nation's altruism. Authors find that those countries with more equal distribution of resources, such as Nordic countries, are

also inclined to support the developing countries financially. They find the link between these phenomena in the social trust and equality, which are peculiar to Nordic countries. Members of high social trust and equality societies believe that all social groups share one fate and bear responsibility for each other. And for groups which own more resources it is better to provide those with less according to Rothstein (2005). Also he thinks this link is transnational. Within the North-Western society Piff, Kraus et. al (2010) found the evidence of reduced altruistic behavior among members of higher social groups. They have conducted four experiments on the students and adults from the US and Canada and revealed that the lower class individuals concern about the welfare of others as the mean of adaptation to their more dangerous environment. This adaptation produces higher prosocial behavior. Respectively to theirs' four studies, members from lower class appeared to be more generous, charitable, trusting, and helpful in comparison with members of higher class. The data of those who ran the experiments indicated that the lower class individuals tend to behave prosocially due to exposition to egalitarian values and feelings of compassion. Nevertheless, the evidence is controversial in the direction of the bias that the endogeneity causes, though the problem is still present and the possible solution will be discussed precisely in the Methodology section. Except income the prosocial and altruistic behavior can be under the influence of education and other factors. For example, Ali Ahmed (2008) uses the prisoner's dilemma game and stag hunt game to investigate the reciprocity through different groups of students and tests the hypothesis that the economic students are less prosocial and more exposed to the selfish behavior. The results obtained do not support the hypothesis, but he finds that police cadets, who are educated in the environment where the cooperation and the teambuilding is promoted, become more prosocial after they complete their education. Bekkers (2005) insists that more educated people emanate all kinds of prosocial behavior. He also finds that education (which in his study consists of human capital, field specific knowledge, social capital, and

attitudes toward the religion and politics) influences the prosocial behavior mostly through the general human capital including communicative abilities obtained in education. By his words "cognitive ability" urges all kinds of prosocial behavior except blood donations, while the income motivates charitable giving.

This literature review has shown several reasons why, at least from a theoretical and intuitive point, prosocial behavior and altruism can have an effect on one's earnings. In this thesis we estimate this effect empirically. The method and data will be described in the next section.

Chapter 3

METHODOLOGY

For estimation of the effect of prosocial behavior on individuals' earnings in different countries I will use the "Log-wage" model constructed by Mincer (1974), but instead of wages, log of average monthly earnings will be utilized as the dependent variable, because the question about respondent's wages was not present in the survey used in this thesis. Instead, respondents in different countries were asked about their net, average, or before tax income, depending on the country survey was made. The model is:

$$LnE_{ij} = \alpha_0 + \beta_i X_{ij} + \delta_i Alt_{ij} + \varphi D_j + u_i \quad (1)$$

Where:

LnE_{ij} – is logarithm of respondent's "i" earnings in the country "j";

X_{ij} – vector of control variables;

Alt_{ij} – an indicator of prosocial behavior of an individual in a particular country;

D_j – country dummy variable;

$\alpha_0, \beta_i, \delta_i, \varphi_i$ – parameters;

u_i – idiosyncratic error term, which includes individual's unobserved characteristics, such as "ability", family background and other factors, which can influence earnings.

The results will be obtained in three stages and presented in the Estimation section:

1. The estimation of the original model without any altruism indicators;
2. The estimation of the models with each indicator and all 5 indicators together (assuming that answers on "opinion" questions also mean the involvement in these activities. This issues will be discussed later on);

3. Construction of "Good citizen" and "Prosocial behavior" indices and estimation of them one-by-one and both in one equation. The next paragraphs describe the process of construction and the logic of indicators and indexes.

As proxies for altruistic and prosocial behavior I use the following variables, which in the questionnaire stated as:

1. There are different opinions as to what it takes to be a good citizen. As far as you are concerned personally on a scale from 1 to 7, where 1 is not at all important and 7 is very important, how important it is:

1.1. To be active in social or political associations; ("Active in associations" dummy variable in further analysis).

1.2. To help people (in respondent's country) who are worse off than yourself; ("Help less privileged – country" variable in analysis).

1.3. To help people in the rest of the world who are worse off than yourself; ("Help less privileged – world" variable in further analysis).

2. Here are some different forms of political and social action that people can take. Please, indicate whether you have done any of these things:

2.1. Donate money or raising funds for social or political activities; ("Donate money or raised funds" variable in the analysis).

3. People sometimes belong to different kings of groups or associations. Please indicate whether you belong to:

3.1. Another voluntary organizations; ("Other voluntary organization" variable in analysis).

All variables correspond to the definition of altruism and prosocial behavior stated earlier in previous sections. All five variables are described entirely in the Data Description section. First three variables reflect the respondent's level of concern to the question asked. For our analysis we initially assume that respondents behave the way they answer these questions. It is very strong assumption because in reality people do not always behave in the way they think is necessary or right to do. Especially in the case of altruistic behavior, when

people may think it is very good to donate to less privileged, but never do it at all. Moreover, questions constructed in the questionnaires allow for double interpretations. Anyway, this dataset contains variables that are useful for our analysis and we do not have other necessary variables for substitution. So, variable four and five directly reflect the activity of a respondent, the first three reflect mainly their opinion. A respondent, by answering the question, reveals her/his own opinion on the issue of what it takes to be a good citizen, but may or may not act her/himself in the way she/he answers these questions. For the initial analysis I assume that the answer on the first three questions reflects not only opinion about particular issue, but also reflects the degree of participation in the activity mentioned in the question. Further in the third stage of analysis instead of these variables I will use two indexes. One ("Good citizen") will reflect the opinion about being a good citizen. The second one ("Prosocial behavior") will reflect the level of activity in donating and volunteering.

The "Good citizen" index will be constructed in the following way. The first three "opinion" variables in the group of five have each 7 categories. I will compress them to 3 categories in each variable allowing for only three answer choices: 1 – "not important" (to donate or participate); 2 - "neither important nor unimportant"; 3 – "important". Then I add these three new variables and make one overall index with 3 categories of importance, the same stated in previous sentence.

The "Prosocial behavior" index will be constructed in the similar way with only difference that the two variables which reflect respondent's activity in donating and raising funds for social and political activities consist from 4 categories (described in *Table A2 block 5 and 6* in appendix and in the Data description section). I will only merge two last categories, which show the answer that a person never participated in such activities or have participated long time ago, of each of these variables into one.

Control variables we include are those that are usually used as wage/income determinants (Mincer 1974); such as gender, age (and age squared), marital status, education level, employment status, weekly working hours, urban/rural residence, work for private/public sector, or self-employment. 39 country dummies are used to control for currency differences. Unfortunately such important income determinants as experience and ability measures are absent in the ISSP 2004 Citizenship dataset. It is a drawback, because people with more abilities and experience will earn more than others. Still, the respondent's age will capture the influence of experience, and the occupation variables can be used as a control for ability, because occupation highly depends on abilities. More able personalities can create their own business, be self-employed or simply have jobs that demand more than average ability and therefore earn more income.

Sizable obstacle emerges on this way and it is multicollinearity and endogeneity of indicator variables. The process of dealing with mentioned issues will be described in the Methodology section. But now I would like to introduce and explain what can happen due to this problem. The presence of high correlation between the dependent variables produces such bias as multicollinearity. The outcome of it is observed in the form of inflated variances of the dependent variables coefficients, which can change drastically due to some changes in the data or the model. Though it does not reduce the predictive power of the model, it influences individual estimates. The results of the Variance Inflation Factor analysis will be presented at the Estimation Results section. The second issue is endogeneity of explanatory variables related to the indicator of altruistic and prosocial behavior, which means that explanatory variable has correlation with the error term, what must not be under the assumption of OLS model, thus producing a bias in estimated coefficients.

To deal with the problem of endogenous variables an instrumental variable, which correlates with the explanatory variable, but does not have an independent effect on the dependent variable, can be of use in a 2SLS procedure.

Unfortunately the ISSP 2004 Survey does not introduce such specific variable that correlates with all or at least one altruism indicator and can be used as instrumental variable. We thus have to acknowledge the existence of endogeneity and the bias it introduces in the estimated coefficients. If earning more makes people more altruistic, our estimates of the effect of altruism on earnings will be biased upwards

Chapter 4

DATA DESCRIPTION

To perform the analysis of the influence of prosocial behavior on the individual earnings the "ISSP 2004 Survey of Citizenship" will be used. ISSP (the International Social Survey Program) is a multinational partnership on surveys important for social sciences. The sample size is 52550 observations for 39 countries and includes such variables as respondent's age, education level, marital and employment status, working hours, earnings, participation in political or social organizations, helping poor inside and outside of the country, and raising or donating funds for social or political activities. All these variables will be employed in the estimation equations; some as standard control variables and other as explanatory variables. To prepare the dataset for analysis I transform the dataset to extract the sample necessary for the analysis in the way described in *table 1* on the next page.

I next describe the different variables included in the model. In addition I report the benchmark category for each categorical variable:

1). "Country".

39 countries are included in the dataset. Variable "Country" contains 36 countries. Observations for three countries (Chile, Venezuela, and South Africa) diffused during the data manipulation stage. The *table A1* in appendix A contains the sample distribution of respondents by country. Taiwan absorbs the biggest share of respondents (5%) and the smallest share is in the East Germany (0.64%). This variable has 36 unique observations and 35 countries (East and West Germany separated). A dummy variable for each country will be used during the analysis and control among other things for currency differences. A base or *benchmark group* will be automatically chosen by the statistical package (Stata 10).

Table 1. Dataset transformation step

#	Steps performed	Obs.	Variables
1	Original dataset	52,55	252
2	Keep variables for analysis	52,55	15
3	Generate log of income	52,55	15
3.a.	Missing values generated	14,737	15
4	After dropping missing earnings observations	37,813	15
5	Generate squared age	37,813	16
6	Keep employed full time, employed part and less than part time. Merged categories are: helping family member, unemployed, student (vocational training), retired, housewife, disabled.	24,445	16
7	Transform gender variable with value 1 assigned to females. "Male" is a base category.	24,434	16
8	Separate the marital status variable into 2 categories out of 5, making the "married" category the base one and the rest are not married. Merged categories are: widowed, divorced, separated, and single.	24,342	16
9	After deleting of all missing values	19,363	16
	Total observations and variables	19,363	16

2). "Good citizen: active in social or political associations".

The survey under study has 10 questions in its questionnaire, answer on which defines what it means to be a good citizen and how important is it according to the opinion of a respondent to the way he/she is personally concerned. For this particular variable the question asked was how important is, for being a good citizen, to be active in social or political associations. It has 7 unique answer choices ranging from "Very important" to "Not important at all" and is *summarized in the Table A2, block 2* in appendix A. The biggest amount of answers, 21% of respondents, indicates that respondents think that for a good citizen it is neither important nor unimportant to be active in any associations. While 10% think that it is not important at all and 12% think that it is very important. The *base category* for analysis is the category with the highest share of respondents, #4 – "neither important, nor unimportant".

3). "Good citizen: help less privileged in the country".

The next variable from the "Good citizen" questionnaire sample is one more indicator of altruism which reflects the level of importance for a good citizen to help less privileged inside of the country of the respondent and the way he or she is concerned. It has 7 unique values reflecting the degree of importance and summarized in the *Table A2, block 3* in appendix A. Though 34% of respondents think that for a good citizen it is very important to help less privileged inside the country and only 1.3% think it is not at all important and 13% are somewhere in the middle. The category #4 – "neither important nor unimportant" will be the *benchmark category*.

4). "Good citizen: help less privileged outside of the country".

This variable is almost the same as previous one, but asks about importance of helping less privileged in other countries. For summary, address *Table A2, block 4* in appendix A. Here 22% think that it is very important to help poor in foreign country and 5% think it is not at all important; 18% are in the

middle. The category #4 – "neither important nor unimportant" will be the *benchmark category* in the analysis.

5). "Political actions: donate money or raised funds for social or political activities".

This variable has 4 categories as the answer choices summarized in *Table A2, block 5* in appendix A. 32% of respondents never tried to do it and do not do it, but 24% have done donations or raised funds during the past year before the interview. The *benchmark category* will be with the largest share of respondents #4 – "not done, never do".

6). "Status of belonging: Another voluntary organization".

This variable describes the respondent's level of participation in some unspecified voluntary organization and has 4 unique values described in the appendix A in the *Table A2, block 6*. The data shows us that 63% of respondents have never belonged to any voluntary organization, 17% used to belong, and 13% of respondents belong and actively participate. The *base category* is #4 – "never belonged to".

7). "Female".

This is a dummy variable that controls for gender and has the value of 1 for female (*Table A2, block 7,* appendix A*).* The data set includes 55% of males and 45% of female respondents. "Males" will be the *base category* in analysis. I change the value 1 for male to 0 and 2 to 1 (female) to make this variable easier to interpret.

8). "Age".

This is a continuous variable where participants of the Survey are from 16 to 89 years old, and the mean age of participants is 41 years. By country descriptive statistics is presented in *Table A3* in appendix A. Mostly, mature and experienced individuals took part in the survey.

9). "Marital status".

It is described in the *Table A2, block 9* in appendix A. The data contains respondents of which 62% are married and 38% are not married and include

those who were never married, separated, but married, divorced or widowed. To facilitate the analysis I make one dummy variable separating married and uniting all other categories into one "not married" and assign to it zero value.

10) "Respondent's education II – highest education level".

The data on this variable contains 6 values of different levels of education ranging from its absence to the university degree. Literature on education and altruism shows that an objective altruistic behavior is inherent to more educated and mature individuals. According to Schortgen (2006), In the United States of America, households with mature white Protestant males with good education as a head, are more likely to donate the largest amounts to charities[1]. Out of six categories I create 3 levels of education by grouping first three categories as the "lowest education" category under value '1'. "Higher secondary education" will go under the second category '2', and the third category '3' will include "above higher secondary degree" and "university degree completed". The third category will be a *benchmark category* as the largest one. I describe it in *Table A2, block 10* in appendix A.

11). "Respondent's: Current employment status".

Initially it had 10 unique categories, after I restrict the set to employed respondents this variable left with 3 categories described in appendix A *block 11, Table A2*. The data set contains 83% respondents employed full time on their main jobs and the rest are employed part time or less than part time. As a *benchmark category* I choose one with the highest number of observations and it is #1 – "employed full time".

12). "Hours worked weekly".

As soon as I have categories of part time employees I include this variable to control for their average working hours per week. Respondents answered question about the amount of weekly working hours they usually have on all jobs

[1] Schortgen, A. C., 2006. The face of donors in America: Who gives and why its matters. Dissertation. Univ. of Texas.

they work. This is the continuous variable descriptive statistic on which is presented in categorical form in the *Table A2, block 12* in appendix A for the reason of its second importance. Forty five percent of respondents work 31 to 40 hours per week, 26% between 40 and 50 hours, 0.5% work more than 90 hours per week.

13). "Respondent: Work for private/public sector; self-employed".

This variable has 4 unique values described in *Table A2, block 13* appendix A. Almost 56% of respondents work in private sector, 20% work for government, and 16% are self-employed. The *benchmark category* for the analysis will be # 3– "work for private firm". This variable will help to capture the difference between earnings of differentially employed respondents.

14). "Urban/rural self-assessment".

It has 3 categories described in the *Table A2, block 14*. 48% of respondents are from big cities and urban areas. 25% are from towns or small cities, and 27% lives at the farm or at the small house in the village. "Urban, a big city" category #1 will be a benchmark category during the analysis, because it has the largest number of observations.

15). "Respondent's earnings".

Earnings in this dataset are defined differently for most countries. Usually respondents were asked to report average, gross or net income from all sources available, including second job. The two words, earnings and income, interchange in the dataset. The variable was named "Earnings", while all questions for the respondents in all countries contain the word income, or net income. For convenience I will utilize the name of the variable in my work, not the notion of income, like it is stated in the questionnaire. For nine countries, in the original data sample, earnings are given as an annual amount, while for the rest of the countries earnings are given as average monthly amount. Difference of questions about earnings constitutes in the issue that respondents in some countries report earnings before taxes, some - after tax. No information about donations was

introduced in the questions about earnings. To control for this differentiation country dummies will be used. I divide yearly earnings observations by twelve to get the average monthly income for facilitating the comparison among the different countries. Descriptive statistics for this variable can be viewed in the *Table A4* in appendix A, where means, min, max, and quantities reported by the country and the currency. By taking the logarithms of all observations I create the dependent variable for the analysis (variable "LogE"). The country dummy will also control for different currencies.

Table B2 in the appendix contains correlation coefficients for the variable set. Star at the right sight of the coefficient indicates the 5% level of significance. Almost every coefficient is significant and postulates correlation among variables. The biggest magnitudes of correlations are highlighted with the grey color. The highest correlation (0.63) is among two indicator variables of helping less privileged inside and outside of the country of residence. Also employment status and weekly working hours have strong negative correlation of -0.57. After that, there is no coefficient that is higher than 0.3. The directions of correlations are as expected. For example, females have negative (-0.25) correlation with working hours, meaning that they work less than males, and they are also less likely to be self-employed (-0.16). Person is more likely to be married more mature she becomes, till some age (0.32). We observe small negative and significant correlation between altruism indicators and the dependent variable for 4 variables out of 5. Correlation coefficients indicate that there is no perfect linear relationship among variables.

C h a p t e r 5

ESTIMATION RESULTS

Now the data descriptions is finished we can move further into analysis and start to use the OLS model to obtain estimation results for the original model without any indicators of altruism, then with each of the indicators of altruism and all indicators together. The next step is to construct the "Good citizen" and "Prosocial behavior" indices (the process of construction is described in the Methodology section) and to estimate their significance. With the final step being, to present, compare, and comment on the obtained results and possible problems. The next paragraphs analyze procedures and the results of OLS estimations. To begin with I estimate the OLS model assuming that all Classical Linear Regression Model assumptions hold.

5.1. Estimation of the Original Model.

The results of the original model with control variables and without any indicators of altruistic or prosocial behavior are offered in the *Table 2* on the next page. I do not report country dummies here due to their irrelevance for presentation, but they all (36) were included in the model. The first regression provides us with anticipated results. All, except "work for public firm", coefficients are significant at 1 percent level. For example, females, in this data sample, earn 29 percent less than males; earnings increases in age, but with decreasing magnitude; married earn 3 percent more than not married; earnings increase in education, those who have no education or have very low educational level earn 53 percent less in contrast to those who obtained a higher than secondary or university degree; part-time employees earn 33 percent less then fully employed respondents, plus who is employed even less than part-time, earn

53 percent less; with each additional hour of work weekly, the income grows by 0.7 percent; governmental and public (there is no definition of a public firm in the original questionnaires, so we assume these firms are publicly traded or joint stock companies) firms workers earn 3 and 5 percent more than private firm workers in this sample, maybe due to underreporting of income by workers of private companies during the answering the questionnaires; self-employed earn 4 percent less than employed by private firms; citizens of small cities and towns, plus those who lives in the village or farm earn respectively 8.6 and 17.5 percent less than inhabitants of big cities, where more work and higher wages/salaries are present.

Table 2. Original Model OLS Estimation
Dependent: Log(earnings)

Reported	**Beta & s.e.**
Female	-0.291*
	(0.01)
Age	0.051*
	0.00
Age squared	-0.001*
	0.00
Marital status	0.031*
	(0.01)
Lowest edu level	-0.530*
	(0.01)
Higher secondary edu	-0.296*
	(0.01)
Employed part time	-0.332*
	(0.02)
Less than part time	-0.527*
	(0.04)
Weekly work hours	0.007*
	0.00
Work for government	0.030*
	(0.01)
Work for public firm	0.049*
	(0.01)
Self employed	-0.038**
	(0.02)
Small city or town	-0.086*

Table 2. Original Model OLS Estimation (cont).

	(0.01)
Country, village, farm	-0.175*
	(0.01)
Constant	7.755*
	(0.06)
R^2	0.877
N	19363

+ p<0.1, ** p<0.05, * p<0.01

5.2. Estimation of Five Indicators of Altruism.

At this point I estimate six equations with one of five altruism indicators in each and all five in the sixth equation. The results are shown in *appendix B, Table B1*. The coefficients of all control variables are consistent with coefficients that have been estimated in the "original" model. Assuming that reported answers, on variables about importance of certain activities for being a good citizen, mean that people behave the way they answer, I will discuss the results and refer the reader to the *Table B1* for details.

For the first indicator "To be active in social organizations" (Equation 1) only 2 of 6 coefficients are significant for categories that tell about unimportance and indifference. In comparison with the base category of "not at all important to be active in social organizations" the coefficients indicate that income, in comparison to base group, of those who answers "unimportant" and "indifferent" is higher by 3.7 and 3 percent respectively. Under the very restrictive assumption about answering and behaving in the same way, the incomes of some nonparticipating individuals are higher, possibly due to time saved from participating and used to gain some additional income. In the equation where all 5 indicators were estimated (equation 6 in the table) all coefficients for this particular variable became insignificant. This is not surprising given the inclusion of an additional twenty variables into the model, variables that are correlated

among themselves. Hence, while the total explanatory power increases slightly, the variable specific influence typically declines.

The second indicator constitutes in helping less privileged in the country of living (equation 2). In comparison with the base category of "not important at all" all other categories, except "very important" are significant and positive, indicating that the earnings of those who think that it is important to help (and we assume if one thinks one helps) increases by 10.6 percent. For the rest categories the coefficient is still a little bit higher than 10 percent, only for those who think that it is "more important than not important", earnings increase by 13%. Observing this variable in the equation 6 it is visible that all coefficients stayed significant and positive, but slightly decreased in magnitude, probably by the same reason of 20 additional variables inclusion.

The result for the variable of helping less privileged in foreign countries show some significant coefficients (equation 3), but with different signs. Comparing with the base category of "not at all important to help less privileged in foreign countries", those who supports this statement have earnings increased by 7.3 percent, and those who answered that it is very important, and behave this way (by assumption only) have their income reduced by 4 percent in comparison to base group. In the equation 6, the same coefficients stay significant, but change in magnitude. For the first group the change is from 7.3 to 4.7 percents, and for the second group from 4 percent to 6.2 percent of decreased earnings.

The next two variables reflect direct participation or non-participation in stated activities, so from now the strong assumption about "thinking therefore behaving" is no longer necessary. The first one is "donating or raising funds for social or political actions" has "never did, will never do" as the base category. Comparing with it obtained coefficient of other categories provides the gradual increase in income with greater involvement in this activities. Earnings increase by 3 percent of those who "did not do it, but might do it" in the future. For those who were involved in raising funds and donations in distant past, earnings

increases by 5.1 percent in comparison with the base group. And those who did it in the past year have their earnings increased by 9 percent. In the equation six, coefficients are significant and almost of the same magnitude, but deceased by 0.003 – 0.005, which is a very small decrease.

The last variable is indicating the belonging and participation in different volunteering organizations has all coefficients positive and significant, indicating that those who belong and actively participate in the volunteering organizations increase their earnings by 6.8 percent in comparison with those who did not belong and never will. But earnings increased by 10.2 percent among those who belong and do not participate actively. In the equation 6 the coefficients of this variable are also significant and positive, approximately of the same magnitude (about 0.6 of a percent less).

After estimating all 6 equations with all available indicators of altruistic (first 3 variables) and prosocial behavior (last 2 variables) I conclude that altruism indicators produce heterogeneous and not stable coefficient estimations. To summarize the results I briefly repeat the outcomes of the analysis. So, helping less privileged inside of own country, positively influences giver earnings; helping less privileged in foreign country – negatively influences earnings. One possible reason for this is that one could be too generous – people who are even very generous with foreigners might as well be generous to their own foreign boss and demand a relatively lower salary. Participation in social organizations is often time and effort consuming occupation, which may demand to sacrifice some portion of working time, and therefore income, on a regular bases. The last two variables of raising funds, donations, and volunteering organization participation provide positive and increasing influence on earnings with the increasing degree of involvement into these activities.

Nevertheless, it is the right time to recall the problem of multicollinearity and endogeneity of indicators. The core of this problem is that altruistic and prosocial behavior can be under the influence of the amount of personal earnings

(endogeneity), but also of the education level, and some other included factors (multicollinearity). In addition, the correlation between indicators is high (look at Table B2 "Correlations" in the appendix B). High correlation among variables produces the problem of multicollinearity in the model. Results of Variance Inflation Factor analysis, which explains the degree of dependence of the variance of one dependent variable from all others variances of included dependent variables are: highest values of VIF = *22.43*; mean VIF = *2.98*. The usual rule of thumb for presence of multicollinearity by Chatterjee, Hadi, and Prince (2000) is:

1. The largest VIF is larger than 10; or
2. The mean VIF is larger than 1.

As the test shows, by both rules, the multicollinearity is present in the model. To deal with this problem "Good citizen" and "Prosocial behavior" indices will be used in the next stage of estimation. To deal with the problem of endogeneity the best method is to introduce an Instrumental Variable (refer to the Methodology section), but the ISSP survey does not provides valid instrument, it is impossible to fix this problem in this analysis. So, we must admit the presence of biased coefficients. As a result, after the first stage of estimating the model with entire set of indicators by OLS procedure, we have multicollinearity and endogeneity problems present in the model. We know from the literature that income and education can positively influence altruistic or prosocial behavior. If this relationship is present in the estimated model, the obtained coefficients are biased upwards.

5.3. The Estimation of "Good Citizen" and "Prosocial Behavior" Indices.

While we can do nothing to escape endogeneity, we can try to reduce multicollinearity and estimate "Good citizen" (GC) and "Prosocial behavior" (PB) indices. Descriptive statistic for indices is present in *Table B3, appendix B.* The GC contains three transformed altruism indicators: to be active in associations, to help less privileged at home country and abroad; and has three

values of importance of these variables for being a good citizen, ranging from 1 – "Not important", 2 – "Indifferent", to 3 – "Important". PB contains two transformed variables: "donate or raise funds for social or political activity", and "participation in some volunteering organizations". The same as original variables, PB has four categories. The results of estimation are presented in *table 4* on the next page in the form of three equations. The first and second equations contain one index each, the third contains both indices together. All coefficients for the control variables are consistent with the original model and were not reported. The striking feature of this model is that the GC index is not statistically significant in both equations. While the PB is significant in both equations and indicates the raising earnings of three groups of individuals starting from those who never donated or raised funds and belonged to volunteering organization, but earnings increases by 3.3 percent. Those who participated in such activities in a more distant past have their earnings increase by 6.5 percent with respect to the base group of those who never did it and will not do it.

Finally, the last group of lucky active people who participated in that kind of activities last year and have their income increased by 10 percent. After the estimation, VIF analysis produced such statistics: VIF = 43.33, and mean VIF = 3.08. Both are high values indicating the presence of the strong multicollinearity. This estimation did not solve the problem of multicollinearity but actually made it even worse. The variable which has the highest value of VIF statistic is "squared age", so if age squared variable is removed from the estimation equation, the VIF becomes 2.56, and mean VIF is 1.55, which reveals some multicollinearity, but these statistics are not as high as in the model with the squared age variable. Also I have removed this variable from the equations and ran the regression of 5 indicators together. Majority of resulting significant coefficients did not change and the rest significant coefficients changed slightly, but not more than 0.005 or 0.5 percent. The maximum VIF in the model with 5 altruism indicators and without age squared term is 22.43 and mean VIF becomes 2.79. Estimating the

model with GC and PB indices and without age squared term has produced the results consistent with the model include age squared term and high VIF in it. Nevertheless, the results obtained did not change significantly, but one problematic issue was resolved.

Table 3. Model with Indices: GC & PB
Dependent: Log(earnings)

Reported	**Beta & s.e.**	**Beta & s.e.**	**Beta & s.e.**
GC index: important to help less privileged and participate in associations	0.012		0.016
	-0.02		-0.02
GC index: not important to help less privileged and participate in associations	-0.006		-0.013
	-0.01		-0.01
PB index: donated/raised funds, volunteered during past year		0.104*	0.108*
		-0.02	-0.02
PB index: in more distant past did		0.062*	0.065*
		-0.01	-0.01
PB index: never done it, might do		0.033*	0.036*
		-0.01	-0.01
Constant	6.498*	6.484*	6.488*
	-0.06	-0.06	-0.06
R^2	0.877	0.878	0.878
N	19363	19363	19363

+ p<0.1, ** p<0.05, * p<0.01

Chapter 6

CONCLUSIONS

To investigate the statement of "Give and it will be given to you" economically, we estimated a Mincerian wage regression adding indicators for altruism. The existing literature provides abundant evidence on the existence of emotional and social return to those who are involved into altruistic and pro-social activities. For example, such people rewarded with enhanced happiness, sense of control over life, self-esteem, life satisfaction, physical health, and reduced depression. Moreover, such activists are paid off by social recognition, reputation, and treated as trustworthy.

At the first stage of the analysis we ran the traditional Mincerian regression and found that the estimated coefficients of the "Earnings determinants" model are fully consistent with expectations. At the second stage we estimated six models with one different altruism indicator in each and one model which includes all of them at the same time. We observed differentiated results for all five indicators, and also multicollinearity and endogeneity problems. For example, helping poor at home produced positive results, while helping poor abroad produced negative results. The same was with being active in associations and participation in voluntary organizations. Donating and raising funds for social activities also produced positive influence on income. But due to multicollinearity resulting coefficients slightly differ between equations.

Therefore we have constructed two indices to reduce this problem. Estimation of models with these indices produces statistically insignificant results for the Good citizen index and statistically significant, comparable with previous results and gradually increasing in the level of participation estimates for Prosocial behavior index. This move helped to reduce the multicollinearity in the model,

but only after we excluded the squared age term, what did not helped on previous stages of estimation.

Having in the back of our mind that income can influence prosocial and altruistic behavior of individuals, and thus the possible presence of upward endogeneity bias in our model, we can summarize that there seems to be the positive influence of some types of prosocial behavior on individuals not only on emotional and physical well-being of practitioner, but also on earnings. This statement is supported by the consistent and positive results of "participating in some voluntary organization" and "donating and raising funds for social or political activities" variables estimation in the original and index forms. The next step in this research would be to solve endogeneity problem and refine the results. Therefore, we conclude that such prosocial activities can be rewarded economically and could be beneficial for personal and social level.

WORKS CITED

Ali, Ahmed. 2008. Can Education Affect Pro-social Behavior? Cops, Economists and Humanists in Social Dilemmas. *International Journal of Social Economics*, Vol. 35, Iss. 4: 298 – 307

Ariely, Dan, Anat Bracha, and Stephan Meier. 2007. Doing good or doing well? Image Motivation and Monetary Incentives in Behaving Prosocially. Boston FRB, Working Paper No. 07-9: 11-14

Adreoni, James, and John Miller. 2002. Giving according to GARP: An Experimental Test of the Consistency of Preferences for Altruism. *Econometrica* vol. 70, No. 2 (March): 737-753.

Arrow, Kenneth. 2006. *Handbook of the economics of giving, altruism and reciprocity*. Amsterdam; Boston: Elsevier/North-Holland.

Anik, Lalin, Lara Aknin, and Michael Norton, Elizabeth Dunn. 2009. Filling Good about Giving: The Benefits (and Costs) of Self-Interested Charitable Behavior. Harvard Business School. WP 10-012.

Bekkers, René. 2005. Field of Education and Prosocial Behavior. Paper prepared for Marktdag Sociologie, Brussels.

Ceruti, Alejandro. 2002. Dynamical Altruism: the Long-Run Effect of the Income Level. JEL Classification: D1, D64.

Dewitte, Siegfried, and David De Cremer. 2005. Give and You Shall Receive. Give More and You Shall Be Honored. Experimental Evidence for Altruism as Costly Signaling. Research Report, OR 0415. *Oxford University Press*.

Eisenberg, Nancy, and Paul H. Mussen. The Roots of Prosocial Behavior in Children. *Cambridge University Press*, 1989. ISBN: 0-521-33771-2.

Elfenbein, Daniel, Ray Fishman, and Brian McManus. 2010. Charity as a Substitute for Reputation: Evidence from an Online Marketplace. Draft (July).

Erkal, Nisvan, Lata Gangadharan, and Nikos Nikiforakis. 2009. Relative Earnings and Giving in a Real-Effort Experiment. The University of Melbourne. Research paper # 1067.

Fehrler, Sebastian. 2010. Charity as a Signal of Trustworthiness. *IZA* DP No. 5299.

Hoffman, Mitchell. 2010. Does Higher Income Makes You More Altruistic? Evidence from the Holocaust. *The Review of Economics and Statistics* Posted online on August 5, 2010.

Konow, James. 2009. Mixed Feelings: Theories of and Evidence of Giving. *Munich Personal RePEc Archive* (October): 20-31

Landes, William, and Richard Posner. 1978. Altruism in Law and Economics. *The American Economic Review*. Vol. 68, No. 2 (May): 417-421.

Lindbeck, Assar, and Jorgen W. Weibull. 1988. Altruism and Time Consistency: The Economics of Fate Accompli. *The Journal of Political Economy* vol. 96, No. 6 (December): 1165-1183.

Materia, Enrico et. al. 2005. Income Inequality and Nations' Altruism. *Lancet* 2005; 365: 1462-1463.

Millet, Kobe, and Siegfried Dewitte. 2007 Altruistic Behavior as a Costly Signal of General Intelligence. *Journal of Research in Personality, 41,* 316 – 326.

Mincer, Jacob. 1974. Schooling, Experience, and Earnings. New York. National Bureau of Economic Research: 41-63

Oswald, J. Andrew, Eugenio Proto, and Daniel Sgroi. 2009. Happiness and Productivity. *IZA* DP No. 4645.

Piff, Paul, Michael Kraus, Keltner Dacher, et. al. 2010. Having Less, Giving More: The Influence of Social Class on Prosocial Behavior. *Journal of Personality and Social Psychology*. Vol. 99, No. 5, 771-784.

Piliavin, Jane Allyn, and Hong-Wen Charng. 1990. Altruism: A Review of Recent Theory and Research. *Annual Review of Sociology* vol. 16: 27-65

Rogers III, M. William, and Leslie S. Stratton. 2005. The Male Marital Wage Differential: Race, Training, and Fixed Effects. IZA DP No. 1745 (September): 10-20

Rothstein, B., Erik Uslaner. 2005. All for All: Equality and Social Trust. *LSE Health and Social Care Discussion Paper Number 15*. London: London School of Economics and Political Science, 2005. ISBN 07530-18377-3.

Thoits, A. Peggy, and Lyndi N. Hewitt. 2001. Volunteer Work and Well-Being. *Journal of Health and Social Behavior* vol. 42, (June): 115-131

Simpson, Brent, Kyle Irvin, and Peter Lawrence. 2006. Does a "Norm of Self-Interest" Discourage Prosocial Behavior? Rationality and Qui Pro Quo in Charitable giving. *Social Psychology Quarterly* vol. 69, No. 3 (September): 296-306.

Simon, A. Herbert. 1993. Altruism and Economics. *The American Economic Review* vol. 83, No. 2 (May): 156-161

Wilson, John, and Mark Musick. 1997. Who Cares? Toward an Integrated Theory of Volunteer Work. *American Sociological Review*. Vol. 62, 694-713.

APPENDIX A

Table A1. Respondents by county distribution

Country	Freq.	Percent	Cum.
AU-Australia	912	4.71	4.71
DE-W-Germany-West	259	1.34	6.05
DE-E-Germany-East	124	0.64	6.69
GB-Great Britain	383	1.98	8.67
US-United States	750	3.87	12.54
AT-Austria	390	2.01	14.55
HU-Hungary	315	1.63	16.18
IE-Ireland	422	2.18	18.36
NL-Netherlands	840	4.34	22.7
NO-Norway	740	3.82	26.52
SE-Sweden	654	3.38	29.9
CZ-Czech Republic	427	2.21	32.1
SI-Slovenia	308	1.59	33.69
PL-Poland	450	2.32	36.02
BG-Bulgaria	306	1.58	37.6
RU-Russia	630	3.25	40.85
NZ-New Zealand	737	3.81	44.66
CA-Canada	521	2.69	47.35
PH-Philippines	474	2.45	49.8
IL-Israel	388	2	51.8
JP-Japan	445	2.3	54.1
ES-Spain	832	4.3	58.39
LV-Latvia	408	2.11	60.5
SK-Slovak Republic	212	1.09	61.6
FR-France	507	2.62	64.22
CY-Cyprus	634	3.27	67.49
PT-Portugal	667	3.44	70.93
DK-Denmark	588	3.04	73.97
CH-Switzerland	568	2.93	76.9
FLA-Flanders	680	3.51	80.42
BR-Brazil	748	3.86	84.28
FI-Finland	456	2.36	86.63

Table A1. Respondents by county distribution (cont).

MX-Mexico	456	2.36	88.99
TW-Taiwan	955	4.93	93.92
KR-South Korea	611	3.16	97.08
UY-Uruguay	566	2.92	100
Total	19363	100	

Table A2. Description statistics

2). Good citizen: Active in associations	**Frequency**	**Percent**	**Cumm.**
Not at all important, 1	2,018	10.42	10.42
Not important, 2	2,041	10.54	20.96
More unimportant than important, 3	2,775	14.33	35.29
Neither important nor unimportant, 4	4,254	21.97	57.26
More important than unimportant, 5	3,824	19.75	77.01
Important, 6	2,129	11	88.01
Very important, 7	2,322	11.99	100
Total	19,363	100	
3). Good citizen: Help less privileged - country	**Frequency**	**Percent**	**Cumm.**
Not at all important, 1	253	1.31	1.31
Not important, 2	351	1.81	3.12
More unimportant than important, 3	959	4.95	8.07
Neither important nor unimportant, 4	2,424	12.52	20.59
More important than unimportant, 5	4,164	21.5	42.1
Important, 6	4,630	23.91	66.01
Very important, 7	6,582	33.99	141.2
Total	19,363	99.99	
4). Good citizen: Help less privileged - foreign country	**Frequency**	**Percent**	**Cumm.**
Not at all important, 1	922	4.76	4.76
Not important, 2	1,136	5.87	10.63
More unimportant than important, 3	1,993	10.29	20.92

Table A2. Description statistics (cont.)

Neither important nor unimportant, 4	3,411	17.62	38.54
More important than unimportant, 5	4,149	21.43	59.96
Important, 6	3,451	17.82	77.79
Very important, 7	4,301	22.21	100
Total	19,363	100	

5). Political actions: Donate money or raise funds	**Frequency**	**Percent**	**Cumm.**
In the past year done	4,650	24.01	24.01
In more distant past done	3,606	18.62	42.64
Not done, might do	5,004	25.84	68.48
Not done, never do	6,103	31.52	100
Total	19,363	100	

6). Status of belonging: other voluntary organizations	**Frequency**	**Percent**	**Cumm.**
Belong and participate	2,456	12.68	12.68
Belong not participate	1,450	7.49	20.17
Used to belong	3,199	16.52	36.69
Never belonged to	12,258	63.31	100
Total	19,363	100	

7). Female	**Frequency**	**Percent**	**Cumm.**
Male	10,596	54.72	54.72
Female	8,767	45.28	100
Total	19,363	100	

8). R: Age	**Frequency**	**Percent**	**Cumm.**
15 - 19	370	1.50	1.5
20 - 29	4,602	18.60	20.10
30 - 39	6,430	25.99	46.09
40 - 49	6,700	27.09	73.18
50 - 59	4,914	19.87	93.05
60 - 98	1,602	6.48	99.52
Refused .b	118	0.48	100.00
Total	24736	100.00	

9). R: Marital Status	**Frequency**	**Percent**	**Cumm.**
Not married	7,280	37.6	37.6
Married	12,083	62.4	100
Total	19,363	100	

Table A2. Description statistics (cont.)

10). R: Education II - highest education level	**Frequency**	**Percent**	**Cumm.**
No/lowest/above	6,601	34.09	34.09
Higher second completed	4,868	25.14	59.23
Above higher secondary/university d	7,894	40.77	100
Total	19,363	100	
11). R: Current employment status	**Frequency**	**Percent**	**Cumm.**
Employed-full time	16,040	82.84	82.84
Employed-part time	2,845	14.69	97.53
Employed less than part-time	478	2.47	100
Total	19,363	100	
12). R: Hours worked weekly	**Freq.**	**Percent**	**Cumm.**
1 - 10	409	2.11	2.11
11 - 20	1,197	6.18	8.29
21 - 30	1,597	8.25	16.54
31 - 40	8,661	44.73	61.27
41 - 50	4,951	25.57	86.84
51 - 60	1,533	7.92	94.76
61 - 70	485	2.50	97.26
71 - 80	291	1.50	98.77
81 - 90	147	0.76	99.52
91 & more	92	0.48	100.00
Total	19,363	100	
13). R: Work for public/private sector, self-employed	**Frequency**	**Percent**	**Cumm.**
Work for government	3,909	20.19	20.19
Publicly owned firm or enterprise	1,524	7.87	28.06
Private firm, others	10,775	55.65	83.71
Self employed	3,155	16.29	100
Total	19,363	100	
14). Type of community: urban-rural, self-assessment, 5 pt scale	**Frequency**	**Percent**	**Cumm.**
City/large town	9,265	47.85	47.85
small town	4,789	24.73	72.58
Country village/farm	5,309	27.42	100
Total	19,363	100	

Table A3. Description of age by country

Age by country	Mean	Min	Max	N
AU-Australia	44	18	81	912
DE-W-Germany-West	41	18	63	259
DE-E-Germany-East	42	20	62	124
GB-Great Britain	42	18	73	383
US-United States	42	18	86	750
AT-Austria	39	18	67	390
HU-Hungary	39	20	62	315
IE-Ireland	40	18	76	422
NL-Netherlands	42	16	74	840
NO-Norway	43	18	75	740
SE-Sweden	43	18	74	654
CZ-Czech Republic	40	19	60	427
SI-Slovenia	39	19	61	308
PL-Poland	39	19	75	450
BG-Bulgaria	43	18	79	306
RU-Russia	41	18	75	630
NZ-New Zealand	44	18	88	737
CA-Canada	46	18	73	521
PH-Philippines	42	18	81	474
IL-Israel	40	18	78	388
JP-Japan	46	21	80	445
ES-Spain	37	18	79	832
LV-Latvia	40	18	71	408
SK-Slovak Republic	43	21	66	212
FR-France	41	19	72	507
CY-Cyprus	39	19	67	634
PT-Portugal	41	18	81	667
DK-Denmark	43	18	74	588
CH-Switzerland	42	18	79	568
FLA-Flanders	40	18	78	680
BR-Brazil	36	18	86	748
FI-Finland	43	20	67	456
MX-Mexico	36	18	79	456
TW-Taiwan	39	18	83	955
KR-South Korea	42	19	75	611
UY-Uruguay	40	18	89	566

Table A4. Earnings by country and currency

Country	Currency	Mean	Min	Max	N
AU-Australia	$AUS	3958.3	260	8666.67	912
DE-W-Germany-West	EUR	1761.43	300	7500	259
DE-E-Germany-East	EUR	1303.54	420	3000	124
GB-Great Britain	GBP	1927.55	166.7	4916.67	383
US-United States	USD	7420.93	41.7	83333	750
AT-Austria	EUR	1329.54	160	5000	390
HU-Hungary	Forint HUF	84316.97	16000	300000	315
IE-Ireland	EUR	2225.7	575	6250	422
NL-Netherlands	EUR	1936.91	125	13000	840
NO-Norway	Kroner	29018.13	1666.7	83333	740
SE-Sweden	Krones SEK	22458.72	1000	210000	654
CZ-Czech Republic	Korunas	12690.28	3000	65000	427
SI-Slovenia	Tolars SIT	334243.5	50000	996000	308
PL-Poland	Zlotys PLN	1244.62	50	8000	450
BG-Bulgaria	Leva BGN	318.75	70	1200	306
RU-Russia	RUR	5466.29	100	40000	630
NZ-New Zealand	NZ$	3581.24	416.7	10000	737
CA-Canada	CAD	3784.4	833.3	6666.67	521
PH-Philippines	Pesos PHP	6237.75	100	85000	474
IL-Israel	Shekel NIS	5326.03	1000	15500	388
JP-Japan	Yen	359.36	41.7	1666.67	445
ES-Spain	EUR	1137.92	250	7000	832
LV-Latvia	Lats	153.16	25	3000	408
SK-Slovak Republic	Koruna SKK	13402.34	1500	150000	212
FR-France	EUR	1908.2	350	9909	507
CY-Cyprus	Pounds	746.36	70	1300	634
PT-Portugal	EUR	788.61	350	3000	667
DK-Denmark	DKR	26763.75	5833.3	54166.67	588
CH-Switzerland	CHF	5708.67	400	145000	568
FLA-Flanders	EUR	1696.98	130	24000	680
BR-Brazil	Reals BRL	1391.07	22	70000	748
FI-Finland	EUR	2654.89	450	80000	456
MX-Mexico	Pesos	5655	600	50000	456
TW-Taiwan	NTD	36345.55	7000	350000	955
KR-South Korea	Won	1962.77	250	10250	611
UY-Uruguay	Pesos	7302.12	2000	45250	566

Appendix B: Table B1. 5 indicators OLS estimation

	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6
Dependent: Log(earnings)			**Models**			
Reported	**Active in social orgs Beta/se**	**Help in country Beta/se**	**Help foreigner Beta/se**	**Donate/raise funds Beta/se**	**Belong/volunteer Beta/se**	**All indicators Beta/se**
Female	-0.291*	-0.288*	-0.287*	-0.292*	-0.289*	-0.287*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age	0.051*	0.051*	0.050*	0.051*	0.050*	0.050*
	0	0	0	0	0	0
Age squared	-0.001*	-0.001*	-0.001*	-0.001*	-0.001*	-0.000*
	0	0	0	0	0	0
Marital status	0.031*	0.031*	0.031*	0.030*	0.032*	0.030*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Lowest education level	-0.529*	-0.526*	-0.528*	-0.516*	-0.517*	-0.503*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Higher secondary education	-0.297*	-0.295*	-0.297*	-0.288*	-0.288*	-0.282*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Employed part time	-0.332*	-0.332*	-0.331*	-0.335*	-0.337*	-0.337*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Less than part time	-0.527*	-0.526*	-0.527*	-0.529*	-0.529*	-0.530*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Weekly work hours	0.007*	0.007*	0.007*	0.007*	0.007*	0.007*
	0	0	0	0	0	0
Work for government	0.018	0.018	0.016	0.021	0.022	0.022
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Work for public firm	-0.031*	-0.032*	-0.033*	-0.028*	-0.027*	-0.028*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)

Table B1. 5 indicators OLS estimation (cont.)

Self employed	-0.068*	-0.069*	-0.069*	-0.069*	-0.066*	-0.069*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Small city or town	-0.086*	-0.087*	-0.087*	-0.085*	-0.087*	-0.087*
Country, village, farm	-0.174*	-0.175*	-0.175*	-0.174*	-0.177*	-0.175*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Active in social orgs. "Not important" - 2	0.037**					0.021
	(0.02)					(0.02)
More not than important, 3	0.022					0.003
	(0.02)					(0.02)
Neither, 4	0.031**					0.01
	(0.02)					(0.02)
More important than not, 5	0.019					-0.005
	(0.02)					(0.02)
Important, 6	-0.003					-0.027
	(0.02)					(0.02)
Very important, 7	-0.023					-0.024
	(0.02)					(0.02)
Help less privileged in the country: "Not important", 2		0.115**				0.083+
		(0.05)				(0.05)
More not than important, 3		0.110*				0.087**
		(0.04)				(0.04)
Neither, 4		0.109*				0.090**
		(0.04)				(0.04)
More important than not, 5		0.130*				0.102**
		(0.04)				(0.04)
Important, 6		0.106*				0.084**
		(0.04)				(0.04)

Table B1. 5 indicators OLS estimation (cont.)

Very important, 7	0.06			0.074+
	(0.04)			(0.04)
Help less privileged foreigner: "Not important", 2		0.073*		0.047+
		(0.03)		(0.03)
More not than important, 3		0.035		0.004
		(0.02)		(0.03)
Neither, 4		0.032		-0.002
		(0.02)		(0.03)
More important than not, 5		0.055**		0.02
		(0.02)		(0.03)
Important, 6		0.025		-0.003
		(0.02)		(0.03)
Very important, 7		-0.041+		-0.062**
		(0.02)		(0.03)
Donate or raise funds for social or political action. "In the past year done", 1			0.090*	0.087*
			(0.01)	(0.01)
In more distant past done, 2			0.051*	0.044*
			(0.01)	(0.01)
Not done, might do, 3			0.030*	0.026**
			(0.01)	(0.01)
Belong and participate in other voluntary organization, 1				0.068* 0.063*
				(0.01) (0.01)
Belong, not participate, 2				0.102* 0.095*
				(0.02) (0.02)

Table B1. 5 indicators OLS estimation (cont.)

Used to belong, 3					0.056*	0.049*
					(0.01)	(0.01)
_cons	7.742*	7.677*	7.755*	7.709*	7.745*	7.655*
r2	0.878	0.878	0.878	0.878	0.878	0.879
bic	33478.674	33451.76	33427.664	33411.183	33405.078	33467.062
N	19363	19363	19363	19363	19363	19363

+ p<0.1, ** p<0.05, * p<0.01

Table B2 Correlations	Active in associations	Help in country	Help outside	Donate/ raised	Belong, volunteer	Female	Age	Marital status	Education level	Employment status	Weekly hours	Self-employed	Urban/rural	Log E
Active in associations	1													
Help in country	0.3202*	1												
Help outside	0.3103*	0.6320*	1											
Donate/raised	-0.1437*	-0.1170*	-0.1400*	1										
Belong, volunteer	-0.1306*	-0.0376*	-0.0300*	0.2483*	1									
Female	-0.0127	0.0653*	0.0706*	-0.0438*	0.005	1								
Age	0.0617*	0.0168*	-0.0236*	-0.0350*	-0.0803*	-0.0518*	1							
Marital status	0.0236*	-0.0248*	-0.0422*	-0.0161*	-0.0354*	-0.0642*	0.3149*	1						
Education level	0.0287*	-0.0357*	-0.0306*	-0.1662*	-0.1943*	0.0598*	-0.0796*	-0.0190*	1					
Empl. status	0.0216*	0.0497*	0.0349*	-0.0361*	-0.0352*	0.2111*	0.0387*	-0.004	-0.0231*	1				
Weekly hours	0.0079	-0.0206*	-0.0376*	0.0673*	0.0319*	-0.2553*	-0.0175*	0.0114	-0.0237*	-0.5652*	1			
Self-employed	0.0160*	0.0022	-0.0136	0.0692*	0.0727*	-0.1694*	-0.0123	-0.0161*	-0.1868*	0.001	0.1803*	1		
Urban/rural	-0.0168*	-0.0464*	-0.0340*	0.0437*	-0.0142*	-0.0363*	0.0402*	0.0906*	-0.1691*	0.0274*	-0.0045	0.01	1	
Log Earnings	-0.0551*	-0.0593*	-0.0815*	-0.0093	-0.1351*	-0.1024*	0.0615*	0.0483*	0.1343*	-0.1570*	0.1345*	-0.0572*	-0.008	1

Table B3. Description of indices

15). Good Citizen Index (importance of 3 previous indicators for being a good citizen):	**Frequency**	**Percent**	**Cumm.**
Not important	3,705	19.13	19.13
Indifferent	1,796	9.28	28.41
Important	13,862	71.59	100
Total	19,363	100	
16). Prosocial Behavior Index: degree of involvement.	**Frequency**	**Percent**	**Cumm.**
In the past year done	2,069	10.69	10.69
In more distant past done	4,266	22.03	32.72
Not done, might do	3,443	17.78	50.5
Not done, never do	9,585	49.5	100
Total	19,363	100	