Title: Charity donations and the Temporary Local Income – the Northern Portuguese case

Author: Paulo Reis Mourão[1];

Department of Economics/ NIPE; University of Minho; Gualtar, 4700 Braga – Portugal; e-mail: paulom@eeg.uminho.pt

Abstract: What are the motivations behind the Northern Portuguese contributions to a Public Campaign promoted by the national League Against the Cancer? This work, the first Portuguese study located in this field of the Economics of Giving, intends to answer to the question, considering the cyclical behaviour of the economy. Using a panel-data approach, it was concluded that Portuguese contributions are significantly related to the local economic cycle. Thus, Northern Portuguese give more if the local economy grows. However, it was verified that an increasing of the number of retired people does promote less expressive donated values which may be understood as deep implications of the decisions taken during a life-cycle pattern (give during the work, save later).

Key words: Economics of Giving; Local Economic Cycle; Determinants of giving

JEL Codes: R29, C31, D640

---

1. Introduction

For some time, the debate on the determinants of giving has revolved around the relevance of the economic or the social determinants. . Since the Titmuss (1971) contestation, an often-repeated view has been that there is no scientific place for *Economics of Giving* because giving may not produce returnable results; thus it may be free according to Compte. Furthermore, the need for working with social dimensions motivates a certain fear of studying the gift relationship, the giving practices or the charity institutions by economists.

This issue has re-emerged with recent calls for an appeal to the attention of the economic world. In the view of some social scientists, giving is not to be separated easily into a category on a higher moral plane than selling which is normally part of a process of exchange in which both parties benefit. Selling is clearly not immoral if both parties benefit in a voluntary exchange. However, giving can create a sense of indebtedness in the recipient and it can foment an attitude of dependence. Collective giving, as in the Welfare State or in aid to other countries, can do short-term good at the expense of long-term harm by weakening the capacity to build independence.

Some researchers, such as Clotfelter (2002), consider three main aspects of the landscape of giving. The three main aspects of this landscape are:

i) Giving is usually a monetary transaction which does not involve face-to-face contact between donor and ultimate recipient, highlighting the role of intermediary organizations. As government has increasingly taken primary responsibility for support of the poor it is apparent that a larger share of what would be thought of as giving goes toward the support of other activities such as education and health.

ii) The existence of a vast heterogeneous set of institutions, one of whose principal tasks is to take and use donations made by individuals (generating a gross product computed as almost 10% of the economy); while some are devoted to aiding individuals far removed from the lives of donors, others are engaged in the support and operation of activities in which donors themselves participate.

iii) The favoured status of contemporary giving, expressed in the opportunity of alleviating personal taxes.

But what can economists discuss about the deep motivations of giving?

De Ven (2000) points out six motivations for giving: altruism, egoism, "warm glow" ('giving is good'), strategy, fairness, and surviving. Clotfelter (2002) suggests four basic reasons: tangible return, "warm glow," altruism and morality. Others, like Horne, Van Slyke and Johnson (2003) verified that political party affiliation, religious denomination, age, and race were all found to be important predictors of support for public funding to Faith-Based Organizations social service providers. These findings replicate the works of Bartkowski and Regis (1999), Chaves (1999) and Cnaan and Boddie (2001). Some other authors, interestingly, found that women donated more than men in dictator games; see, for instance, Eckel and Grossman (1998).

However, a number of important issues remain unresolved in the empirical literature on the *Economics of Giving*. Clotfelter (2002) points out some of them, like how price affects giving, how individuals decide among giving today, saving, and giving in the future or the relationship between giving behaviours and different kinds of recipient organizations.

This work fills the void in Portuguese literature, being the first to investigate the donated values response to the cyclical component of the local economic cycle in a sample of the vast majority of the municipalities of the North of Portugal (84 municipalities have been studied) over the years 2002, 2003 and 2004, recurring to the most comprehensive database provided by a Portuguese solidarity institution, the League Against Cancer. The discussion model divides the budget restrictions of the agents into a temporary and a permanent part and the maximizing utility behaviour produces the result that giving is strongly influenced by the temporary part of the income, later used as the testable empirical hypothesis. Consequently, the paper explores several variations and specifications using panel data regressions to test the robustness of the baseline specification.

The paper is organized as follows: Section 2 presents the most relevant contributions to the methodological innovations of the economic study of giving. Section 3 presents the discussion model. Section 4 presents the empirical model, data and the econometric results. Section 5 concludes.

2. The methodological framework of the economic study of giving

The fact, the importance, the nature, and the various types of reciprocity have not escaped from Adam Smith's perspective who, according to Kolm (2000), wrote about them in *The Theory of Moral Sentiments*. In 1924, another relevant study was published: *Essay on the Gift*, by Marcel Mauss, who developed a deep anthropological framework.

Following Alchian et al. (1973), we have to go back to the year of 1968 to find a seminal work located in the contemporary field of *Economics of Giving*. Then, Cooper and Culyer (1968) focused on the care of a shortage of blood which led to the question whether the British system of voluntary giving by blood donors was sufficient to ensure the supply of blood that could be made available for saving lives. However, Schmidt (1964) had already discussed the *Economics of Giving* related to the loan opposed to the grant decision.

Titmuss (1971) contested Cooper and Culyer (1968) in "The Gift Relationship" developing the argument that selling blood had led to undesirable consequences in the market of the United States of America. According to Titmuss (1971), blood provided at a price by "professional" blood suppliers created a larger risk of infection than did blood given by voluntary donors, and monetary compensation for donating blood crowds out the supply of blood donors. This contestation was hardly criticized by the economists Rottenburg (1971), Kenneth Arrow (1972) and the sociologist Nathan Glazer (1971).

These last authors did not agree that the giving practices could not be studied by economists, arguing that although it is difficult to separate the "Economics of Giving" from the Ethics, it is of central importance for economists. Philanthropy does not conflict with Economic Theory which can be applied to giving as well as to selling.

Dharmi and al-Nowaihi (2005) point to Becker (1974) and Bergstrom, Blume and Varian (1986) as the seminal authors of rigorous theoretical work in the *Economics of Giving*. In this line of research, charitable giving has the nature of a public good – givers care about the sum total of giving by all givers, motivated by altruism. But giving by one individual is a perfect substitute for another, which might give rise to a *free rider* problem. Cornes and Sandler (1984) and Andreoni (1989 and 1990) introduced the term *warm glow,* ensuring that one's own giving is no longer a perfect substitute for the giving of others. Facing the possibility of governmental interference, the previous literature has warned that if public grants are financed by taxes on givers they can completely crow out private giving. This theoretical literature has also explored the implications of tax deductions for charitable giving, as revealed by the studies of Feldstein (1980), Boadway and Keen (1993) and Diamond (2003). In general, for these authors, subsidies increase private giving while direct governmental grants are less attractive because they rely on distortionary taxation.

But nowadays what can the economists discuss about the deep motivations of giving?

De Ven (2000) points out six motivations for giving and six corresponding aims:
- Altruism, a term first suggested by Auguste Compte, whose prior aim is self-sacrifice, giving priority to others;
- Egoism, whose main objective is to promote exchange;
- Warm Glow, aiming for social approval;
- Strategy, for signalling or building trust;
- Fairness, related to conceptually approved norms and intending to reduce social inequality;
- and Surviving, whose main aim is to guarantee the (social) selection of the giver and/or the recipient.

Kolm (2000) also describes some motivations for giving. One may give for doing one's fair share in giving given that other contributors do theirs; for conforming to others' giving in a similar situation of the giver and of the circumstances; for keeping up with other givers; for not being humiliated or ashamed by giving less or not at all; and for maintaining or conquering a relative status in generosity or wealth hence possibly in engaging in conspicuous competitive giving. But sometimes there is place for non-altruistic giving, like when somebody gives for a final reason other than for the receivers' good, or not only for this motive.

According to Clotfelter (2002), economic theorists have suggested four basic reasons to explain giving:
1) the most willingly acquiescent with the utility-maximizing model is tangible material return;
2) "warm glow" when somebody feels pleasure because she simply gives;
3) altruism, when the donor is interested in the well-being of the recipient and thus benefits when the recipient is better off;
4) higher-order set of beliefs or morality.

Particularly reflecting on these four reasons, Clotfelter (2002) recognizes that most giving probably involves some mixture of more than one of these classes of motives. Other relevant motivations are the private knowledge of the needy people and the

proximity of the recipient charities – people tend to contribute to charities close to home ignoring eventual poorer areas or more urgent situations.

If, as observed, giving reflects an act valued according to the effects, what are these effects?

Giving produces significant social effects, as reported by Kolm (2000). These social effects can consist of judgements or sentiments (praise, esteem, status of virtuousness, gratitude, affection), social situations (giving can result from or create both a higher or lower status), and social relations (peace, goodwill, agreement, friendship, liking, and enjoying the social intercourse). Giving can also favour the self interest of the giver through various effects which can be returned. Gifts or rewards of various origins, consequences of status, or indirect effects through markets or political or other social processes can also be identified. For Kolm (2000), and by following a Maussian perspective, giving and exchange are the two kinds of free transfers, but giving also affects the distribution of wealth, income, or consumption in society. Giving thus elicits judgments of distributive justice and also the most acute conflicts among them. For instance, giving to our children due to parental affection usually does not respect their true needs, their merits, or principles of equality. By contrast, giving to the needy people or to the poor satisfies basic needs and tends to reduce inequality thanks to a free choice of the giver.

As critically noticed by Andreoni (2002), the *Economics of Giving* has been well studied on the supply side but there remain critical gaps on the demand side. Some of the most significant evidence in the supply side follows.

Seldon (1987) concluded that variations in giving do not necessarily indicate changes in selflessness over time or between classes or societies, but do indicate changes in the underlying costs and prices of time and other resources.

Brown and Laukford (1991) found that donations of time and money are compliments, not substitutes for many donors. Okten and Weisbrod (2000) found that advertising increases donations to private non-profit organizations.

Brooks (2001) found that public funding to radio stations has a positive impact on private giving but this impact rapidly decreases as the level of government subsidies increases, ultimately becoming negative.

Clotfelter (2002) enunciates some of the patterns and trends available in the giving practice. Two thirds of American households reported having made such donations in 1996. Americans on average gave away almost 2% of their personal income, amounting to $116 billion in 1995. Decedents left another $9.8 billion in the form of charitable bequests. The amount given by individuals is greater than the contributions made by corporations or the grants made by private foundations. Still, according to Clotfelter (2002), giving by individuals has remained a nearly constant proportion of personal income over the last two decades. Both average contributions and the percentage of households who report any contribution tended to rise with age into middle age and then go back down (especially in the 45-64 age group). Holding constant income and price, giving rises markedly with age. Several possible explanations exist for the positive age effect, mainly reflecting the effect of wealth, a frequently omitted variable. Another

explanation is that there is a cohort effect at work, wherein older generations are simply more generous than those born more recently. The most likely reason is a simple life-cycle effect, wherein individuals of all generations become more generous as death approaches. Karlan and List (2006) also corroborate that the combination of increased wealth and an aging population will lead to an even higher level of gifts.

The percentage of givers also tends to rise with income, and those who attend church usually give more. Interestingly, as a percentage of income, giving shows the U-shape (the poorest and the richest give more than the middle classes). Other variables that have been found in past studies to be positively related to giving include education, marriage, number of children, home ownership, living in a city under one million in population, and having parents who gave regularly. Since some of these characteristics tend to vary together, it is not clear if all would be judged to have independent effects on giving holding other things constant. Churches and other religious organizations were by far the most common recipients, accounting for some 57.5% of all donations from individuals in 1993 (the second most significant recipients were Human services, Educational Institutions and Health-related organizations while the less significant set was compounded by Arts, Culture and Humanities).

One interesting branch of studies is related to the estimation of the *income effect* and the *price effect* of giving. In the *Economics of Giving*, income is defined as it often is in other applications as disposable income. For its turn, price is considered net of taxes, being identified with the difference between 1 and the deductible percentage of the (monetary valued) gift. According to Clotfelter (2002), the most estimates of the price elasticity are in the range of -0.5 to -1.75 and of the income elasticity are in the range of 0.4 to 0.8, advertising that more recent studies tended to produce larger income elasticities and smaller price elasticities in absolute value. Clotfelter (2002) also shows that, according to the conventional models of giving, tax rate cuts, by raising the net-of-tax price of giving should reduce charitable giving, other things equal, but the actualised evidence from Clotfelter (2002) reveals that personal giving as a percentage of income remained steady over time. Andreoni and Miller (2002) found that the level of giving to others increases as price decreases. As verified by Karlan and Miller (2006), some alternative works strictly related to the price effects via rebate mechanisms (such as changes in tax deductions) are Clotfelter (1985), Randolph (1995) and Peloza and Steel (2005).

In a survey conducted for the PEW Foundation in March 2001, Horne, Van Slyke and Johnson (2003) verified that political party affiliation, religious denomination, age, and race were all found to be important predictors of support for government funding to Faith-Based Organizations' (FBO) social service providers. Republicans, those who identify with a religious denomination and attend church, Evangelical Christians, Blacks and Hispanics, and individuals under age 65 were more supportive. These findings are also generally consistent with those identified by Bartkowski and Regis (1999), Chaves (1999) and Cnaan and Boddie (2001). However, there are no consistent results from empirical investigations of the effect of government funding on private giving, which motivated a number of religious leaders and others to speculate that increased public funding for FBO could lead to decreases in private giving, discrediting those who argue that government funding of an FBO would act as a signal of the organization's quality to potential donors, encouraging increased private giving.

Other interesting evidence reports that the most important contributors to charity are the private individuals, the direct grants from government, the corporate sector, the charitable trusts and foundations and lottery money. In the developed countries, half of the total budget of charities comes from governmental institutions, contrasting with the reality provided by the developing states, where, on average, only 21.1% of the global amount donated to charities is given by the Government.

As recorded by Messchaert-Smith (2005), there was a series of studies on religious giving published in the *Review of Religious Research* in December 1994. Most of these studies focused on predictors of charity, income being the greatest predictor. Denominational studies show that, *ceteris paribus*, there are significant differences on giving depending on the religious denomination of the individuals.

Eckel and Grossman (1998) found that women donated more than men in a dictator game. They interpreted this as women being less selfish than men. However, an additional reason for giving in dictator games[2] apart from altruism and fairness may be to signal generosity to increase esteem or prestige, as registered by Mellstrom and Johannesson (2005). Andreoni and Vesterlund (2001) compared men and women in a dictator game where the token value of tokens given to the recipient varied. They found that men were more responsive to the token value than women. This is consistent with a stronger degree of prestige sensitivity for women, if the prestige of giving is independent of the token value. Landry, Lange, List, Price and Rupp (2006) find that contributions to a public good are higher when the solicitor is an attractive female. This could suggest that women should lead high profile charity fundraising.

Usually being an individual practice subject to strictly personal motivations, it becomes harder to socially analyse the giving practice. In this sense, as remembered by Clotfelter (2002), there remain questions that have been very hardly answered. Some of these issues are the following:
- how price affects giving;
- the consumption choices over time (how individuals decide among giving today, saving, and giving in the future);
- interdependence of giving-behaviour – to what extent does any individual's giving depend on the giving of friends, neighbours and business associates;
- the effectiveness of fundraising appeals;
- the relationship between giving behaviours and different kinds of recipient organizations;
- the necessary interdisciplinarity of this theme, exchanging results with the Sociology, the Psychology and History.

On one hand there is the argument that people give more when it is cheap to give and when their income is large, but on the other hand there is disagreement on how sensitive giving is to temporary and permanent changes in these variables. Future research on panel data is needed to settle this dispute, Vesterlund (2006) concludes.

3. The discussion model

---

[2] In dictator games the first of two players, the proposer, divides an amount of money (the pie or cake) between the two players. The other player, the responder, can only accept the decision and amount of money allocated to him or her.

As suggested, there is an increasing variety of economic models studying the behaviour of rational givers and/or recipients. Some of these models are those suggested by Warr (1982), Landsburg (1997), or Kolm (2000).

For the particular purpose of this work, we will follow the model suggested by Kolm (2000).

Thus, when the donor is altruistic, she is concerned about the welfare of the recipient and her utility function assumes the form of (3.1):

$$u_g = u(m_g - C, m_r + C) \qquad (3.1)$$

where m_g identifies the initial endowment of goods of the giver, C and m_r are described as above (they are, respectively, identified with the value of the gift to the recipient and with the initial endowment of the recipient), assuming that m_g is greater than C.

If the giver gives for other reasons, she chooses C that maximizes (3.2):

$$u_g = u(m_g - C, C, S_g) \qquad (3.2)$$

where S_g is the set of all relevant variables and parameters other than the first two arguments (endowment and gift) that may influence the value of C.

We will consider a first restriction:

$$x_g + C + o_g \leq m_g \qquad (3.3)$$

By (3.3), we are informed that the initial endowment of the giver is all spent in her usual private consumption, x_g, in her private charitable contribution, C, and in other occasional goods, o_g.

The usual optimising solution claims that she will consume so many private goods as charitable and occasional ones in order to equalise their marginal utilities. Consequently, if we try to sketch a charitable offer function, we will reach the following:

$$C = f(m_g, x_g, o_g, S_g) \qquad (3.4)$$

It is expected that m_g is characterized by a positive sign whilst the private consumption and the occasional consumptions are characterized by a negative sign. The other potential factors, S_g, vary according to the suggested evidence of prior studies.

But let us assume that the initial endowment of the giver can be decomposed into two components: a permanent part, m_g^p, and a transitory one, m_g^t. With the permanent part, the giver consumes her traditional bundle of private goods and services. With the

transitory income, the giver supports charitable actions among other occasional consumptions, o_g. In this case, the restriction (3.3) can be divided into (3.3.1) and (3.3.2):

$$x_g \leq m_g^p \tag{3.3.1}$$
$$C + o_g \leq m_g^t \tag{3.3.2}$$

After the optimization proceedings, we will conclude that now the values donated to the charities will not be influenced by the permanent part of the income of the giver but by the temporary one. Thus, the equation (3.4) will become (3.5):

$$C = f(m_g^t, o_g, S_g) \tag{3.5}$$

In this case, m_g^t will produce a positive effect in C and the other occasional consumptions will be identified as the unique substitute good.

All these equations from (3.1) to (3.5) conclude with Mundell (1998) that a donor will always choose the cheapest from among potential gifts that yield the same utility to the donee. The dual of this theorem claims that from among gifts costing the same, the donor will choose that which will produce the most utility to the donee, following the predictions of the theory of rational behaviour.

According to our model, the testable hypothesis takes a clearer form:

"The donated values are significantly influenced by the transitory part of the agents' income."

Now, we will try to test this hypothesis using the available Portuguese data. The following section describes the procedures.

4. Empirical Model and Data

Baseline model

The econometric approach for the present study is based on the previous literature investigating determinants of cross-municipality variation in personal giving. Clotfelter (2002) and Andreoni and Miller (2002) developed models of charitable gifts as functions of income (as the most expressive economic variable) and of relevant cyclical variables (like the volume of corporate sales). Other variables (like the number of old people, the nuptiality rate, the fecundity rate, the religious attendance or party orientation) were added by the work of Horne, Van Slyke and Johnson (2003) to reflect the social factors of giving that can positively influence the amount of the donated values.

Unlike the previous empirical models, this study focuses on the North of Portugal reality, being one seminal work in the Portuguese case as a whole. Following the analytical framework, we test the hypothesis that the donations municipally given to the Portuguese League Against Cancer react to cyclical economic movements, being

positively related to the chosen cyclical variable. On the other hand, the relationship between values locally given and permanent income must be considered. Hence, we postulate that per capita income would have a positive effect on the observed gifts.

We thus model cross-municipality variations in personal giving (GIFT) as a function of local income (*PIB*) and corporate sales of corporations whose head-office is located in the municipality (*SALES*), the unique variable that is municipally and regularly computed in Portugal aiming at expressing the local economic cycle. For controlling the structure of the social pattern, we considered the local population size (*POP*), the age structure, divided into the most generous groups, the size of young people under fifteen years (*JOV*) and the number of old people (*OLD*), the nuptiality rate (*NUPT*), the fecundity rate (*FEC*), the percentage of religious marriages (*RELIG*), the number of resident women (*WOMEN*) and the number of retired people (*RETIR*):

$$GIFT_{i,t} = \beta_0 + \beta_1 PIB_{i,t} + \beta_2 SALES_{i,t} + \beta_3 JOV_{i,t} + \beta_4 OLD_{i,t} + \beta_5 NUPT_{i,t} + \beta_6 FEC_{i,t}$$
$$+ \beta_7 RELIG_{i,t} + \beta_8 WOMEN_{i,t} + \beta_9 POP_{i,t} + \beta_{10} RETIR_{i,t} + \varepsilon_{i,t}$$

$$(4.1)$$

We estimated equation (4.1) using panel data regression analysis. The analysis covers 84 municipalities over the years 2002, 2003 and 2004. Because the dependent and the independent variables are nonnegative and positively skewed, a log transformation of them (except the suggested dummy) is used in estimating equation (4.1). This yields a log-log regression equation, where the β's are an estimate of the impact of the growth rate of each independent variable on the growth rate of the dependent variable.

Data on values locally collected are drawn from the Yearly Report of the Public Collection of the Regional Nucleus of the North of the Portuguese League Against Cancer (*Relatórios Anuais de 2002, 2003 e 2004 do Peditório do Núcleo Regional do Norte da Liga Portuguesa contra o Cancro*). This is the most comprehensive database of a Portuguese institution of solidarity and the most credible source for studying the Portuguese giving pattern. Usually, the collectors ask people to give during the first days of December, interviewing them in the public streets, when leaving the dominical masses or when leaving the pubs. But this data also has the values given by the entrepreneurial and the public sectors, unfortunately not discriminated in the source.

Data on per capita income is from the official value for the national economy computed by the Bank of Portugal for the observed years (2002-2004) multiplied by the respective municipal coefficient found by Ramos (1998). Data on the corporate sales and data on control variables (the social ones) is drawn from the Regional Statistical Yearbook of the North of Portugal *(Anuário Estatístico da Região Norte)* and from the Regional Statistical Yearbook of the Center of Portugal[3] *(Anuário Estatístico da Região Centro)*, for the years 2002, 2003 and 2004 (these works are yearly edited by the National Institute of Statistics, *Instituto Nacional de Estatística*). The dominant party is identified with the democratically elected party that rules the municipal organs and its source was the National Commission of Elections (*Comissão Nacional de Eleições*).

---

[3] Six municipalities reported by the Yearly Report of the Public Collection of the Regional Nucleus of the North of the Portuguese League Against Cancer are considered, according to the National Institute of Statistics, as belonging to the NUT II Center (Albergaria-a-Velha, Aveiro, Estarreja, Murtosa, Ovar and Sever do Vouga).

Econometric results

Due to the small temporal length of the panel (t=3), some cautions must be observed. According to some authors (like Buch and Lipponer, 2007, or Fawcett, 2005, and Helpman et al., 2004) it is preferable to run several regressions, using alternatively fixed, random or between effects to observe the consistency of the results[4]. Additionally, it is recommended to run the regressions using the first differences of the (log) variables, which has the advantages of clarifying the sign of the estimated effect and of suggesting the relationship between the acceleration (growth rate of the growth rate) of the independent variables and the acceleration of the dependent ones.

Table 4.1 provides the results of the baseline regressions. The regression reveals that the effect of corporate sales--the cyclical variable--on locally donated values is positive and statistically significant. We also observe that income is not significant; what strengthens the hypothesis is that, in this case, giving is strongly influenced by the cyclical variations of the local economy felt by individuals, corporations and local public services.

Table 4.1 – Donated values and the Local Economic Cycle: Baseline Regressions
(T-statistics in parentheses)

Dependent Variable: Donated values						
Estimation Technique	Fixed Effects	Random Effects	Between Effects	Fixed Effects	Random Effects	Between Effects
Variables (levels/differences)	Levels			Differences		
Income	0,638 (1,088)	0,101 (0,117)	0,075 (0,093)	0,405*** (0,122)	0,409*** (0,094)	0,128 (0,106)
Sales	0,299** (0,143)	0,238*** (0,076)	0,006 (0,074)	0,152*** (0,091)	0,157** (0,073)	0,076 (0,090)
Young	-0,223 (0,169)	-0,370* (0,192)	0,097 (0,515)	-0,344* (0,203)	-0,364* (0,189)	-0,459 (0,823)
Old	-0,370 (0,280)	0,050 (0,203)	0,174 (0,257)	0,362 (0,258)	0,399* (0,217)	-0,025 (0,419)
Nuptiality rate	0,026 (0,136)	0,210 (0,155)	0,448 (0,245)	0,469** (0,184)	0,417*** (0,158)	-0,143 (0,228)
Fecundity rate	-0,194 (0,172)	-0,318 (0,194)	-0,690** (0,326)	-0,186 (0,231)	-0,268 (0,192)	-0,303 (0,207)
Religious Marriages	-0,115 (0,140)	0,077 (0,171)	0,183 (0,278)	0,002 (0,184)	0,074 (0,160)	0,390 (0,238)
Women	-0,114 (0,150)	-0,121 (0,189)	-0,211 (0,578)	0,084 (0,194)	0,073 (0,183)	2,442 (3,158)
Population	1,313	1,008**	0,203	0,465	0,528	-1,716

[4] The generally accepted way of choosing between fixed and random effects is running a Hausman test. The Hausman test tests the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. In all of these cases (Tables 4.1 and 4.2), they are not, because we got significant p-values. Regressing panels with between effects is equivalent to taking the mean of each variable for each case across time and running a regression on the collapsed dataset of means – this is a simplistic way of studying the panel considering only one temporal observation for each individual, commonly used to infer about the static differences among the cases.

	(1,623)	(0,398)	(0,589)	(0,437)	(0,398)	(3,224)
Retired people	-0,155***	-0,097**	0,051	-0,072*	-0,075**	0,001
	(0,037)	(0,040)	(0,126)	(0,042)	(0,038)	(0,188)
R2 (within/between/overall)	0,220/ 0,732/ 0,731	0,039/ 0,817/ 0,803	0,073/ 0,949/ 0,782	0,647/ 0,392/ 0,586	0,626/ 0,582/ 0,616	0,001/ 0,801/ 0,049
F-statistics/Wald chi-square	3,80	591,94	109,78	23,13	354,67	24,99
P-value	0,00	0,00	0,00	0,00	0,00	0,00
Nr observations	243	243	243	234	234	234
Nr Groups	84	84	84	84	84	84

Source: See text.

(***), (**), and (*) denote significance at the 1, 5, and 10 percent levels, respectively.

Across all regressions in levels, the impact of the standard set of regressors on the dependent variable deserves an additional comment. Contrary to some studies, the sign of the variable associated with the number of retired people or the sign of the variable associated with the number of resident young people is negative and statistically significant. A possible explanation points to the scarcity of the values endowed by Portuguese retired workers and, by generalization, by a typical Portuguese household, which does not support a willing to (generously) collaborate with charitable actions like the reported one. This biases the traditional life-cycle pattern, which produces a behaviour of giving more during the active time and giving less after retirement.

Across all regressions with the first differences of the log variables, we observe that the growth rates of the local income, the local corporate sales, and of the nuptiality rate increase the growth rate of the donated values, whilst the growth rate of retired people decreases the dependent variable. Facing our prior observations, we additionally recognize a social local characteristic (the propensity to marriage) that may influence the propensity to give, which may be interpreted in line with the socio-economic findings of Clotfelter (2002).

However, there remains an issue: what are the determinants of those (donated) values considered in per capita terms?

In this case, we model cross-municipality variations in per capita donated values (*PGIFT*) as a function of per capita income (*PPIB*), per capita corporate sales of corporations whose head-office is located in the municipality (P*SALES*), still controlling for the structure of the social pattern, thus studying the effect promoted by the nuptiality rate (*NUPT*), the fecundity rate (*FEC*), the percentage of religious marriages (*RELIG*), the number of resident women as a percentage of the population (*PWOMEN*), the number of young people as a percentage of the population (PJOV), the number of old people as a percentage of the population (POLD) and the number of retired people as a percentage of the population (PRETIR). The suggested equation becomes:

$$PGIFT_{i,t} = \beta_0 + \beta_1 PPIB_{i,t} + \beta_2 PSALES_{i,t} + \beta_3 PJOV_{i,t} + \beta_4 POLD_{i,t} + \beta_5 NUPT_{i,t} + \\ + \beta_6 FEC_{i,t} + \beta_7 RELIG_{i,t} + \beta_8 PWOMEN_{i,t} + \beta_9 PRETIR_{i,t} + \varepsilon_{i,t}$$

(4.2)

We also estimate equation (4.2) using panel data regression analysis, covering the 84 municipalities over the years 2002, 2003 and 2004. Again, a log transformation of the variables was computed.

Table 4.2 reports the results. Here, we verify that the previous statistically significant variable, *SALES*, preserves its significance. Thus, we can point to the cyclical compound of the local economic performance as relevant to explain the individual decision on how much to give. The percentage of retired people preserves its negative sign, emphasizing the specific life-cycle pattern that was previously highlighted (give during work, save after retirement).

Taking the regressions with the differenced variables, we observe that the dependent variable is positively influenced by the changes in the growth rates of per capita income and per capita sales and it is negatively influenced by the changes in the growth rates of the percentage of retired people.

Table 4.2 – Per Capita Donated values and the Local Economic Cycle
(T-statistics in parentheses)

Dependent Variable: Per capita Donated values						
Estimation Technique	Fixed Effects	Random Effects	Between Effects	Fixed Effects	Random Effects	Between Effects
Variables (levels/differences)	Levels			Differences		
Per Capita Income	0,581 (0,953)	0,187*** (0,051)	0,066* (0,037)	0,250*** (0,063)	0,317*** (0,049)	0,211*** (0,067)
Per Capita Sales	0,350** (0,141)	0,175*** (0,052)	0,078* (0,044)	0,196** (0,076)	0,199*** (0,064)	0,118 (0,090)
Young (% Population)	-0,215 (0,170)	-0,336* (0,198)	-0,044 (0,389)	-0,235 (0,183)	-0,355** (0,173)	-0,761 (0,836)
Old (% Population)	-0,407 (0,274)	0,113 (0,195)	0,095 (0,198)	0,291 (0,253)	0,364* (0,217)	-0,103 (0,423)
Nuptiality rate	0,002 (0,136)	0,320** (0,159)	0,570*** (0,197)	0,277 (0,181)	0,330** (0,156)	0,537** (0,210)
Fecundity rate	-0,189 (0,173)	-0,275 (0,203)	-0,493* (0,264)	-0,086 (0,,224)	-0,262 (0,191)	-0,408* (0,226)
Religious Marriages	-0,130 (0,144)	0,077 (0,179)	0,207 (0,220)	-0,007 (0,180)	0,075 (0,161)	0,185 (0,268)
Women (% Population)	-0,183 (0,152)	0,031 (0,199)	0,453 (0,455)	-0,008 (0,016)	-0,002 (0,032)	0,004 (0,032)
Retired people (% Population)	-0,162*** (0,036)	-0,064 (0,043)	-0,012 (0,101)	-0,084** (0,041)	-0,084** (0,038)	0,376 (0,264)
R2 (within/between/overall)	0,193/ 0,076/ 0,095	0,001/ 0,504/ 0,409	0,014/ 0,860/ 0,455	0,372/ 0,001/ 0,216	0,306/ 0,297/ 0,295	0,002/ 0,594/ 0,019
F-statistics/Wald chi-square	3,54	76,05	40,09	9,22	92,95	10,69
P-value	0,00	0,00	0,00	0,00	0,00	0,00
Nr observations	242	242	242	233	233	233
Nr Groups	84	84	84	84	84	84

Source: See text.
(***), (**), and (*) denote significance at the 1, 5, and 10 percent levels, respectively.

In spite of this evidence, this work highlights the first results in order to evaluate the giving practice in the northern region of Portugal and it proves that in this case the cyclical economic behaviour significantly influences the size of the municipal donations to a Public Campaign like the one studied, promoted by the Portuguese League Against Cancer. Another prominent issue that this work identified is related to the less generous behaviour of the usual (North-American) cohorts – the old and the young people. As Clotfelter (2002) enunciates, this evidence touches on the need for a global understanding of the life-cycle behaviour: if people save during their work-time period and they give at the end of their life, they also can rationally give to charities during their work-time period and prefer to save at the end, revealing that they do not receive sufficient endowments to share with charity demands when they are retired. Additionally, the differences among countries (see for instance the average pension of a North-American and compare with a Portuguese pension) may explain the atypical Portuguese behaviour denoted.

5. Conclusions

This work has discussed some methodological issues on the subject of *Economics of Giving*.

Although the Smithsian *Theory of Moral Sentiments* had suggested the complex analyses of reciprocity, the seminal debate that delineated the *Economics of Giving* appeared with the polemical contributions of Cooper and Culyer (1968) and Titmuss (1971), centered on blood donation. Since then, many other issues have been discussed, especially concerned with the religious charity, the role of governmental action and international aid.

In general, giving is not altruistic/gratis, in the sense of Compte, because every giver expects returns from the gift. Returns or motivations that can be identified are egoism (I give because it increases my prestige), warm glow (it makes me feel better), strategy (it reveals me as a good person), fairness (it reduces inequality) or surviving (it improves the well-being of people that I like to help).

Secondly, this research has also produced econometric evidence of the importance of the local economic cycle on the municipal donated values to the Public Campaigns of the Portuguese League Against Cancer by examining the determinants of these amounts in a panel of municipalities over the years 2002, 2003 and 2004. We concluded that the local economic cycle is significantly relevant to explain the differences of the values donated by municipality. This result was robust to a variety of control variables included in additional regressions. As expected, we also identified a magnifier effect from the population size. By contrast, the presence of a larger number of old people or of young people did not reveal a significant positive effect but a negative one.

An implication of the results is that the more important structure of income to explain giving is the temporary one, in Portuguese reality. Roughly expressing, people give when they can, when the economy is growing and they feel that their basic needs can be satisfied. Another relevant implication is in line with Clotfelter (2002) and Vesterlund (2006), when these authors argue that the cohort effects are mainly dependent on the

particular economic situation of the agents: if people gave to charities during their work-time, they tend to give less when they become retired; if they preferred to save while working, then, using a life-cycle model we will reach the conclusion that they rationally will prefer to give to charities at the end of their life.

Some important questions were raised by this work, questions that deserve future research. For instance, the individual motivations behind the Portuguese contributions to charities remain to be explained. This question needs a deeper focus on individual inquiries or the answer may promote a recurrence to experimental economics. Another interesting question is related to national behavior, unfortunately here compressed into the northern observations due to the scarcity of the data. We hope that the various institutions and the various organizations of the charity/solidarity sector improve their research and their publications, enlarging the observed cases and the analyzed periods.

References

Alchian, A., Allen, A., Tullock, G., Culyer, A., Ireland, D., Johnson, D., Cooper, M., Koch, J., Ireland, M. and A. Salsbury (1973); "The Economics of Charity"; *IEA Reading Paper* 12; Institute of Economic Affairs; London

Andreoni, J. (1989); "Giving with impure altruism: applications to charity and Ricardian Equivalence"; *Journal of Political Economy*; 97; 1447-1458

Andreoni, J. (1990); "Impure altruism and donations to public goods: a theory of warm glow giving"; *Economic Journal*; 100; 464-477

Andreoni, J. and J. Miller (2002); "Giving According to GARP: An Experimental Test of the Consistency of Preferences for Altruism"; *Econometrica*; 70; 2; 737-753

Andreoni, J. and L. Vesterlund (2001); "Which is the Fair Sex? Gender Differences in Altruism"; *Quarterly Journal of Economics*; 116; 1; 293-312

Arrow, K. (1972); "Gifts and Exchanges"; *Philosophy and Public Affairs*; 1 (4); 343-362

Bartkowski, J. and H. Regis (1999); "'Charitable Choice' and the Feasibility of Faith-Based Welfare Reform in Mississippi"; *Research Bulletin of the Joint Center for Poverty Research at Northwestern*/University of Chicago; Chicago

Becker, G. (1974); "A Theory of Social Interactions"; *Journal of Political Economy*; 82; 1063-1093

Bergstrom, T., Blume, L., and H. Varian (1986); "On the private provision of public goods"; *Journal of Public Economics*; 29; 25-49

Boadway, R. and M. Keen (1993); "Self-Selection and Optimal Income taxation"; *International Economic Review*; 34; 463-478

Brooks, A. (2001); "Private Philanthropy and the Economics of Public Radio"; *Center for Policy Research Working Papers* 41; Center for Policy Research; Syracuse University

Brown, E. and E. Laukford (1991); "Gifts of money and gifts of time"; *Journal of Public Economics*; 47; 321-329

Buch, C. and A. Lipponer (2007); "Volatile multinationals? Evidence from the Labor Demand of German Fims"; *Deutsche Bundesbank and NBER workshop Paper* on "Micro-data based research on direct investment"; Cambridge

Chaves, M. (1999); "Religious congregations and welfare reform: Who will take advantage of "Charitable choice?" "; *American Sociological Review*; 64; 6; 836-846

Clotfelter, C. (1985); *Federal Tax Policy and Charitable Giving*; University of Chicago Press; Chicago

Clotfelter, C. (2002); "The Economics of Giving"; revised paper (available from http://www.pubpol.duke.edu/people/faculty/clotfelter/giving.pdf) of Clotfelter, C. (1997); "The Economics of Giving"; in Barry, J. and B. Manno, eds (1997); *Giving better, Giving Smarter - Working Papers of the National Commission on Philanthropy and Civic Renewal*; Washington D.C.; 31-55

Cnaan, R. and S. Boddie (2001); "Black Church Outreach: Comparing How Black and Other Congregations Serve Their Needy Neighbors"; *Center for the Research on Religion and Urban Civil Society at the University of Pennsylvania*; Philadelphia

Cooper, M. and A. Culyer (1968); "The Price of Blood"; *IEA Reading Paper*; Institute of Economic Affairs; London

Cornes, R. and T. Sandler (1984); "Easy riders, joint production and public goods"; *Economic Journal*; 94; 580-598

De Ven, J. (2000); "The Economics of the Gift"; *Discussion Paper* 68; Tilburg University, Center for Economic Research

Dhami, S. and A. al-Nowaihi (2005); "Coordination Failures, Philanthropy, and Public Policy"; *Discussion Papers in Economics* 05/21; Department of Economics, University of Leicester

Diamond, P. (2003); "Optimal tax treatment of private contributions for public goods with and without warm glow preferences"; *mimeo*; MIT

Eckel, C. and P. Grossman (1998); "Are Women Less Selfish Than Men? Evidence from Dictator Experiments"; *Economic Journal*; 108; 448; 726-735

Fawcett, N. (2005); *Panel Data Notes*; University of Oxford; *mimeo*

Feldstein, M. (1980); "A contribution to the theory of tax expenditures: the case of charitable giving"; in Aaron, J. and M. Boskins, eds (1980); *The Economics of Taxation*; Brookings; Washington

Glazer, N. (1971); "Blood"; *The Public Interest*; Summer

Helpman, E., Melitz, M. and S. Yeaple (2004); "Export versus FDI with Heterogeneous Firms"; *American Economic Review*; 94, 1; 300-316

Horne, C., Van Slyke, D. and J. Johnson (2003); "Attitudes toward public funding for faith-based organizations and the potential impact on private giving"; *Spring Research Conference of the Independent Sector and Rockefeller Institute of Government*; available from http://www.socialpolicyandreligion.org/docs/events/2003_spring_research_conference/horne.pdf

Instituto Nacional de Estatística (2002, 2003, 2004); *Anuário Estatístico da Região Norte*; Lisboa

Instituto Nacional de Estatística (2002, 2003, 2004); *Anuário Estatístico da Região Centro*; Lisboa

Karlan, D. and J. List (2006); "Does price matter in charitable giving? Evidence from a large-scale natural field experiment"; *Yale Economic Applications and Policy Discussion Paper* 13; Yale University

Kolm, S. (2000); "Introduction to the Economics of Altruism, Giving, and Reciprocity"; Equality Exchange paper; Norwegian School of Economics and Business Administration, available from http://mora.rente.nhh.no/projects/EqualityExchange/Portals/0/articles/kolm11.pdf

Landry, C., Lange, A., List, J., Price, M. and N. Rupp (2006); "Toward an Understanding of the Economics of Charity: Evidence from a Field Experiment"; *Quarterly Journal of Economics*; 121; (2); 747-782

Liga Portuguesa contra o Cancro (several years); *Relatórios Anuais de 2002, 2003 e 2004 do Peditório do Núcleo Regional do Norte da Liga Portuguesa contra o Cancro*; Lisboa

Mellstrom, C. and M. Johannesson (2005); "Crowding out in blood donation: was Titmuss right?"; *Working Papers in Economics* 180; School of Economics and Commercial Law; Goteborg University

Messchaert-Smith, J. (2005); "Outsourcing church charity as the result of opportunity cost – a case study of the United Methodist Churches of Washington DC"; *Meetings of the Association for the Study of Religion, Economics, and Culture*; George Mason University

Mundell, R. (1998); "Uses and abuses of Gresham's Law in the History of Money"; *Zagreb Journal of Economics*; 2; 2

Okten, C. and B. Weisbrod (2000); "Determinants of donations in private nonprofit markets"; *Journal of Public Economics*; 75; 2; 255-272

Peloza, J. and P. Steeel (2005); "The Price Elasticities of Charitable Contributions: A Meta-Analysis"; *Journal of Public Policy & Marketing*; 24; 2; 260-272

Ramos, P. (1998); "Estimativas do PIB per capita para os concelhos do continente português"; *Revista de Estatística*; Lisboa

Randolph, W. (1995); "Dynamic Income, Progressive Taxes, and the Timing of Charitable Contributions"; *Journal of Political Economy;* 103; 709-738

Rottenburg, S. (1971); "The production and exchange of used body parts"; in *Toward Liberty: Essays in honour of Ludwig Von Mises*; Institute for Human Studies; Menlo Park

Schmidt, W. (1964); "The Economics of Charity"; *Journal of Political Economy*; 72; 387-393

Seldon, A. (1987); "The new Economics"; *Study Guide number 2*; Libertarian Alliance; London

Titmuss, R. (1971); *The Gift Relationship*; Allen and Unwin; London

Warr, P. (1982); "Pareto Optimal Redistribution and Private Charity"; *Journal of Public Economics;* 19; 131-8