

# Does pay motivate volunteers?

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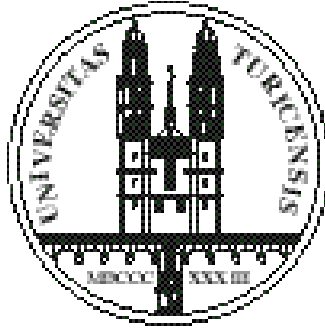
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DOES PAY MOTIVATE VOLUNTEERS?

By

Bruno S. Frey and Lorenz Goette\*

**Abstract:** Volunteer work is an increasingly large, yet ill-understood sector of the economy. We show that monetary rewards undermine the intrinsic motivation of volunteers. A unique data set from Switzerland allows us to assess the effects of financial rewards on the effort put into volunteer work. There is a fairly standard pattern regarding the volunteers reaction e.g. to more labor market work hours. But we obtain the puzzling result that, when rewarded, volunteers work *less*. These findings are in line with a large literature in social psychology emphasizing that external rewards can undermine the intrinsic motivation for an activity. We show the implications for public policy towards volunteering.

*JEL classification:* A13;D23;J30.

*Keywords:* Volunteer Work; Crowding-Out; Intrinsic Motivation; Price Incentives.

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# I. Introduction

The voluntary sector forms an important part of the economy. For the United States, in 1990 volunteer labor accounted for 6.8 percent of total employment. In France, the United Kingdom and Germany the respective shares were 4.2, 4.0 and 3.7 percent (Salamon and Anheir, 1994, p.32). Volunteer labor has been growing sizably over time (see Hodgkinson et al., 1992, pp. 27-29). It is therefore relevant to know how this sector of the labor market works. One of its distinguishing features is the absence of explicit monetary incentives for the share of work done. Nonetheless economists should in particular be concerned with how volunteers respond to monetary incentives. Thus, can the number of hours worked in the voluntary sector be raised by offering financial incentives? This is particularly important, as it is often suggested that tax deductions may provide additional incentives to volunteer.

Many economists consider the non-profit sector, and volunteer work, to be similar to any other sector in the economy. Individuals are assumed to respond systematically to relative prices. When the wage for work in the market economy increases, the opportunity cost of volunteering increases and less voluntary work is offered *ceteris paribus*. Insofar as voluntary work is rewarded financially, an increase in this rate raises the number of voluntary work hours offered. Such relationships have been well supported empirically (see e.g. Menchik and Weisbrod, 1987; Brown and Lankford, 1992).

Other economists focus on the special features of the voluntary sector. They consider volunteers to be a systematically different sort of people who self-select themselves into the non-profit sector because they find its goals and purpose attractive. The non-profit organizations in turn look for those persons whose preferences they find compatible. "Ideological founders will seek to hire managers and employees who share their vision..

Committed employees may be easier to attract ...(and) may accept lower levels of pay in return for greater certainty that their efforts are actually helping to achieve their altruistic goals“ (Rose-Ackerman 1996, p. 719-720). At least two studies provide evidence for such behavior: Freeman (1997) shows that individuals were more likely to volunteer if they were asked to do so. A survey (Fischler 1995) reveals that while virtually all volunteers indicate that they believe they are fulfilling an important task for society (97 %), only very few agreed that this should be rewarded financially, either through tax deductions (25 %), or that volunteer work should be amenable for the (public) pensions (20 %). The latter result is particularly striking. Only a small minority desires financial rewards.

This second view may be interpreted to suggest that volunteers have a substantial amount of intrinsic motivation, i.e. under certain conditions are prepared to undertake a task „for its own sake“ or for immediate need satisfaction (Calder and Staw, 1975; Deci, 1975) and that many volunteers seem to refuse monetary rewards. This does, of course, not preclude that volunteers may also be extrinsically motivated, for example to establish valuable personal contacts or to increase their skills. Two forms of monetary incentives are particularly important for volunteer work: Tax deductions and direct payments to volunteers. Several studies found that higher earnings taxes increase both the likelihood and hours volunteered (Weisbrod and Menchik, 1985; Brown and Lankford, 1992). The authors therefrom conclude that direct tax subsidies would encourage volunteer work. This is only true, of course, if the intrinsic motivation is unaffected by such a change in policy.

There is so far no evidence how volunteers would respond if their work was partly paid<sup>1</sup>. At least in our data set, which we will describe in more detail below, a sizeable fraction of

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<sup>1</sup> In Switzerland, for instance, charities are considering this option (Wallimann, 1993).

volunteers receive small payments. These are meant to compensate for expenses incurred such as transportation or parking, or attendance at certain meetings.

We are not aware of any study focusing on the evaluation of the consequences of either tax incentives or direct payments to volunteers. Largely, this is due to the fact that in previous surveys volunteers were not asked whether they received any payments.

Recent research suggests that external financial rewards may reduce intrinsic motivation. The so-called "crowding-out effect" proposes that intrinsic motivation may under identifiable conditions be undermined by monetary payments (Frey 1997, Frey and Oberholzer-Gee 1997). The fact of receiving a reward reduces the intrinsic motivations to volunteer, while the size of the reward provides financial incentives. Due the two opposing influences the total effect on volunteering is undetermined in sign. Provided the crowding-out effect is strong enough, small rewards may even reduce hours volunteered. Many years ago Titmuss (1970) pointed out that paying for blood donations may reduce blood giving because the potential donors feel their motivation not to be appreciated. Arrow (1972) and Solow (1971) could not see any reason why this should be the case. Since then the situation has changed; now, there exists a well-developed social psychological theory supporting Titmuss' hunch ( e.g. Deci and Ryan, 1985; Deci and Flaste, 1995).

Our paper uses the Swiss Labor Force Survey to econometrically address the issue outlined above. We show that there is a statistically significant crowding-out effect on volunteer work, if volunteers receive financial compensation. If the rewards are small enough, they actually *reduce* hours volunteered. These findings have important policy implications towards volunteer work: monetary incentives may have an unintended consequence and crowd out intrinsic motivation, changing both the quantity as well as the quality of volunteer work.

The paper is structured as follows. Section II shortly summarizes crowding theory and develops the hypotheses to be tested. Section III presents the data and section IV the econometric estimates. Section V concludes.

## **II. Crowding-Out Effect and Hypotheses**

Social psychological research has identified the „hidden cost of reward“ (e.g. Lepper and Greene, 1978) : people who are paid to perform a task which they did previously for its own sake (i.e. they are intrinsically motivated) reduce their effort. This effect appears when compensation is perceived to be controlling, i.e. reducing a volunteer's feeling of self-determination. The same holds when an implicit or psychological contract (see Rousseau, 1995) is thereby violated. Such a relationship has been the subject of a large number of laboratory experiments. The results have been summarized in no less than four formal meta-analyses. Wiersma (1992) looks at 20 studies covering 1971 - 1990, Tang and Hall (1995) at 50 studies from 1972 - 1992. They support cognitive evaluation theory developed by Deci and his coworkers (e.g. Deci and Ryan 1985) to account for this phenomenon. This view was challenged by Eisenberger and Cameron (1996) who concluded on the basis of their own meta-analysis covering studies published over the period 1971 - 1991 that the undermining effect is largely „a myth“. However, Deci, Koestner and Ryan (forthcoming) in a careful and extensive study argue that this conclusion is unwarranted. This most recent meta-analysis includes all the studies considered by Eisenberger and Cameron as well as several studies which appeared since then. The 68 experiments reported in 59 articles span the period 1971 - 1997, and refer to 97 experimental effects. It turns out that tangible rewards, a subset of which is monetary compensation, undermine intrinsic motivation for tasks undertaken (at least partly) for intrinsic reasons in a statistically highly significant and reliable way. This

suggests that the negative relationship between extrinsic and intrinsic motivation empirically exists and is robust under the conditions identified.

Crowding theory represents a generalization for economics in three respects : (1) intrinsic motivation can be systematically affected not only by money, but by any external intervention; (2) Intrinsic motivation may be crowded out or crowded in (if the external intervention is perceived to be supportive instead of controlling); (3) It is important to simultaneously consider crowding and relative price effects. Crowding theory is consistent with several applications in economics: in the labor market by Barkema's (1995) study of the supply of effort by managers, Frey and Oberholzer-Gee's (1997) analysis of NIMBY-problems, and Frey's (1997) study of tax evasion . There are also various case studies, e.g. in the context of so-called „token economies“ (see Kazdin, 1982).

On the basis of these general notions it is possible to derive testable propositions with respect to work supply in the voluntary sector. This is best done in a principal-agent relationship. The volunteer in the role of an agent chooses the optimal amount of work effort (input of hours). The manager as the principal of the respective non-profit organization offers compensation to influence the volunteer work supply.

The utility of volunteering is  $U(V, P)$ , and the cost of volunteering is  $C(V, P)$ , where  $V$  is hours volunteered, and  $P$  is payments made to the volunteer. We assume that  $\partial U / \partial V \equiv U_V > 0$ ,  $\partial^2 U / \partial V^2 \equiv U_{VV} < 0$ ,  $C_V > 0$ ,  $C_{VV} > 0$ . Rational individuals choose that amount of volunteering that maximizes  $U - C$ , i.e. they choose  $V$  such that

$$U_V = C_V$$



A (change in the) payment  $P$  for performing volunteer work has the following impact on this choice:

$$U_{VP} + U_{VV} \frac{dV^*}{dP} = C_{VP} + C_{VV} \frac{dV^*}{dP}$$

or

$$\frac{dV^*}{dP} = \frac{U_{VP} - C_{VP}}{C_{VV} + U_{VV}} > 0$$

which is undetermined in sign. Two polar cases may be distinguished.

*Relative Price Effect.* An increase in pay for volunteering lowers the opportunity cost of doing it, i.e.  $C_{VP} < 0$ . If no crowding-out effect exists ( $U_{VP} = 0$ ), an increase in pay for volunteering increases the supply of voluntary work:

$$\frac{dV^*}{dP} > 0$$

*Crowding-Out Effect.* An increase in pay for volunteering undermines the marginal utility of volunteering, i.e.  $U_{VP} < 0$ . If there is no relative price effect ( $U_{VP} = 0$ ), an increase in pay for volunteering must reduce the supply thereof:

$$\frac{dV^*}{dP} < 0$$

Taking the special selection of volunteer workers into account, there is some amount of volunteer supply without compensation. When payment for volunteering is offered by the principals, the agent switch to a different mode of supply. Little is known how the crowding

effect varies with the size of rewards. It seems plausible that it is particularly strong at low levels of rewards, but becomes relatively weak as the rewards increase ( $C_{VP}$  dominates  $U_{VP}$ ) and the price effect dominates.

The two propositions to be tested are:

*Hypothesis 1* : Individuals receiving a reward for volunteering offer less hours of work compared to individuals who do not receive any reward.

*Hypothesis 2* : A higher reward induces more volunteer hours.

### III. Data

The Swiss Labor Force Survey 1997 provides useful information regarding volunteer work and the economic background of the respondents. The respondents were asked the following question:

*"We would now like to ask you a couple of questions about unpaid labor. We are interested in volunteer activities that you performed in organizations and public or private institutions. Did you perform one or more activities of this type?"*

The examples that were given for this type of activities include charities, cultural organizations, political parties or environmental organizations. The following questions determine the type of organization the individuals were involved in and the time they spent volunteering. Next, volunteers were asked the following question:

*"Did you receive financial compensations for this activity? Do not count reimbursements."*

It is this question that makes the survey unique. While the other questions, even the wording, are very similar to other data sources as e.g. the Current Population Survey (see Freeman, 1997), we are unaware of any other survey that explicitly asks whether volunteers receive some form of pay.

We chose to look at individuals who volunteer in local political organizations, public services, interest groups and local political office<sup>2</sup>. This sample is particularly appropriate for our purposes for several reasons: First, the activities exerted by the volunteers are relatively similar across groups, which also makes the labor input comparable. Second, the political sector is the one where financial rewards or reimbursements are most prevalent. In our sample, approximately 20 percent of all volunteers receive financial rewards, as opposed to only about 6 percent of all individuals indicating that they volunteered, which gives us the necessary variation to estimate its impact. Third, and most importantly, the assumption of exogenous variations in financial rewards is best met in this sample. If non-profit principals anticipate a strong crowding-out effect, and if their goal is output maximization, we would not expect to observe one. However, compensations in the political sector are less likely to be set by such a process. Whether one receives rewards or not is embodied in administrative procedures that are not necessarily aimed at output maximization.

Table 1 gives an overview of the descriptive statistics. On average, approximately 14 hours per week are devoted to voluntary work in the political sector. 20 percent of the volunteers receive monetary rewards. The number of hours worked, and the share of persons receiving monetary compensation do not differ much between individuals who are employed in the

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<sup>2</sup> We selected all those individuals who indicated they were volunteering in this sector. If they had engagements in more than one organization, we took the one first indicated to classify the individual.

market and those who are not. Households with incomes above CHF 6,000 (about USD 4300) per month work more hours, and a higher share of them (23 against 14 percent) are partly compensated for that volunteer activity.

*Table 1 about here*

## IV. Estimation

Table 2 provides the summary statistics for different reward conditions. The control group consists of volunteers who receive no compensation ; they offer on average 14 hours. The remainder of the sample is split up between 48 volunteers receiving a very small monetary reward only (less than CHF 50 (about USD 35) per month, and those receiving more than CHF 50 per month. The latter group of volunteers offer much more hours (21) than the former (less than 12 hours). This indirectly suggests that the price effect works. Volunteers are prepared to put in more work when they are better compensated. But a comparison between the 11.7 hours of work done by volunteers with low compensation to those receiving no compensation at all who put in 14 hours indicates at the same time that the crowding-out effect may work. These conclusions are, however, at best suggestive; it is, of course, necessary to control for other factors which are likely to influence volunteer labor supply.

*Table 2 about here*

An econometric estimate of the supply function for volunteer work is presented in table 3. The dependent variable is hours volunteered per month. Consider column (A) first. Not surprisingly, the opportunity cost of time has an effect. As can be seen in table 3, regular work hours have a negative and significant influence on hours volunteered. The more hours individuals work on the market, the less hours they work in the political voluntary sector. Women offer less political volunteer work which reflects their weaker engagement in politics

compared to men<sup>3</sup>. These results correspond well with other estimates of supply functions for volunteer work (see e.g. Menchik and Weisbrod. 1987; Freeman, 1997). We also include the number of involvements in non-profit organizations as an explanatory variable. We find a strong effect of the number of involvements in other organizations on hours volunteered. Individuals who are active in more than one organization also tend to be engaged in the political voluntary sector to a higher degree. Controlling for the number of engagements is also important in order to test our hypothesis regarding the crowding-out effect. The more organizations an individual is involved in, the higher is the probability of receiving a compensation.

***Table 3 about here***

We now turn to the statistical test of our hypothesis. Hypotheses 1 is tested by using a dummy variable taking the value of one if a monetary reward is received, and zero otherwise. This coefficient is negative and significantly different from zero. This is consistent with the crowding-out effect. The supply curve of volunteer labor shifts to the left due to the fact that a different mode of compensation is introduced. Compared to the situation in which volunteer work is unconnected with any monetary compensation, voluntary work supply *falls* by about 4 hours per month. This finding is ill at ease with the notion that work supply in the voluntary sector is virtually identical with the one in the rest of the economy.

Hypothesis 2 is tested by looking at the influence of varying the size of monetary rewards. In order to allow for decreasing effectiveness of pay on work supply, reward is introduced in the

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<sup>3</sup> This is also reflected, e.g. in the low fraction of women in local governments. Between 1990 and 1993, it averaged 19.4 percent in Switzerland, with a small increase over the past four years to 23.1 percent (see *Année Politique Suisse 1997*).

form of a linear and quadratic term. Both effects are statistically highly significant. An increase in rewards raises volunteer work supply but in a marginally decreasing manner<sup>4</sup>.

In fact, comparing the magnitude of the crowding-out effect and the extent to which higher rewards induce volunteer work, we find that at least CHF 75 per month (approximately US\$ 50) need to be paid to the volunteer to achieve the same hours volunteered as without rewards. Given that the median reward is only CHF 60, rewards in our sample reduce hours volunteered for the majority of volunteers who receive financial compensation for their work. None of these conclusions depends on – possibly different – rewarding policies in different types of organizations. Column (B) in table 3 displays the estimates of the same supply function when one includes dummy variables for the type of organization the volunteer is active in. Obviously, the inclusion of those variables changes very little.

There is, however, another concern that might be raised when including the number of involvements as an explanatory variable for hours volunteered. One might argue that the number of involvements is really an endogenous variable that might be influenced by the same unobservables that determine hours volunteered.

*Table 4 about here*

Hence, there might be a problem of simultaneity in our regression. Moreover, since rewards and the number of involvements are correlated, this bias is likely to spread to the coefficient of our variable of interest, namely the rewards dummy. As always, the direction of the bias is unknown but must be assessed using an instrumental variables estimator. We instrument the number of involvements with a dummy for employment, several age categories, and years

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<sup>4</sup> The effect of a pay rise on work input is positive over the whole relevant range of volunteer work offers.

lived in town. The variables predict the number of involvements ( $F(7, 683) = 3.12, p < 0.01$ ). The 2SLS estimates are displayed in table 4, again with and without organization dummies. The results closely resemble those in table 3, but as is normally the case with 2SLS estimates, they are less precise. The important message is that the coefficient on the reward dummy is still negative and significant, but larger in absolute value. Hence simultaneity bias cannot account for our results. If anything, simultaneity introduces a downward bias on the estimated crowding-out effect.

## V. Conclusions

Volunteer work is a quantitatively large sector in many economies and knowing its determinants is important for public policy. Several studies have pointed out that intrinsic motivation may be important for volunteering (Freeman, 1997; Fischler, 1995).

We use a unique data set from Switzerland to evaluate how financial rewards to volunteers affect their intrinsic motivation. We find that the incidence of rewards reduces volunteering. While the size of the rewards induces individuals to provide more volunteer work, the mere fact that they receive a payment significantly reduces their work efforts by approximately four hours. The magnitude of these effects is considerable. Evaluated at the median reward paid, volunteers work indeed *less*. These results are immune to possible simultaneity bias or differences in reward policies between types of organizations. The results are in line with experimental evidence indicating that financial rewards can reduce intrinsic motivation and provide another real-life application of crowding theory (Frey, 1997).

These findings have important implications for policy towards volunteer work. Direct incentives may backfire, leading to less volunteering. Under these circumstances, tax deductions explicitly aiming at making volunteering less costly may not lead to the desired

effect and possibly cause the opposite. Even individuals reacting to changes in relative prices, as they are in our data set, may be subject to motivational crowding-out. Future research should endeavor to find out more about the relative size of the countervailing price and crowding-out effects in the non-profit economy.



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TABLE 1: VOLUNTEERING IN THE POLITICAL SECTOR  
DESCRIPTIVE STATISTICS

	WHOLE SAMPLE	STRATIFIED ACCORDING TO					
		GENDER		EMPLOYMENT		HOUSEHOLD INCOME PER MONTH	
		MEN	WOMEN	EMPLOYED	NON- EMPLOYED	< CHF 6000	> CHF 6000
Average Hours per Month volunteered (s.e.)	13.799 (0.54)	14.580 (0.65)	11.467 (0.89)	14.292 (1.00)	13.593 (0.633)	12.187 (0.80)	14.759 (0.71)
Fraction of Volunteers who receive rewards	0.199	0.203	0.182	0.175	0.207	0.141	0.231
Number of Observations	691	491	200	215	471	271	420

Source: Swiss Labor Force Survey 1997 (SLFS); Own calculations.

arks:

TABLE 2: VOLUNTEERING IN THE POLITICAL SECTOR  
DESCRIPTIVE STATISTICS

	REWARD CONDITIONS		
	CONTROL GROUP (ALL VOLUNTEERS)	VOLUNTEERS WHO RECEIVED SMALL REWARD	VOLUNTEERS WHO RECEIVED LARGE REWARD
<b>All Volunteers</b>			
Average Hours per Month volunteered (s.e.)	13.962 (0.59)	11.6779 (1.51)	21.0253 (1.64)
Number of Observations	564	48	79

Source: Swiss Labor Force Survey 1997 (SLFS); Own calculations.

Remarks: a. Small rewards are defined as less than CHF 50.00 per month.

TABLE 3: STATISTICAL TEST OF THE CROWDING-OUT EFFECT

DEPENDENT VARIABLE: HOURS VOLUNTEERED PER MONTH

	(A) WITHOUT ORGANIZATIONS FIXED EFFECTS	(B) WITH ORGANIZATIONS FIXED EFFECTS
Hours worked per week	-0.047 (2.28)*	-0.048 (2.32)*
Gender (female = 1)	-3.310 (2.29)*	-3.258 (2.21)*
Crowding-Out Effect (Dummy-Variable: Received reward = 1)	-4.301 (2.90)**	-4.432 (2.43)*
Rewards	0.056 (5.60)**	0.056 (5.53)**
Rewards squared / 100	0.020 (5.27)**	0.021 (5.28)**
$R^2$	0.14	0.14

Remarks:

a. t-statistics in parenthesis.

b. \* significant at 5% level; \*\* significant at 1% level

TABLE 4: 2SLS ESTIMATES OF THE CROWDING-OUT EFFECT

DEPENDENT VARIABLE: HOURS VOLUNTEERED PER MONTH

	(A) WITHOUT ORGANIZATIONS FIXED EFFECTS	(B) WITH ORGANIZATIONS FIXED EFFECTS
Hours worked per week	-0.060 (2.37)*	-0.060 (2.35)*
Gender (female = 1)	-0.495 (0.29)	-0.368 (0.21)
Number of Engagements in Organizations	19.220 (2.34)*	19.881 (2.43)*
Crowding-Out Effect (Dummy-Variable: Received reward =1)	-12.712 (2.34)*	-10.732 (2.42)*
Rewards	0.062 (5.77)**	0.063 (6.15)**
Rewards squared / 100	0.000 (4.92)**	0.000 (5.05)**
$R^2$	0.14	0.14

Remarks:

a. t-statistics in parenthesis.

b. \* significant at 5% level; \*\* significant at 1% level