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The Relationship between Public Subsidies and Unearned Revenues for Non-profit Organizations: Testing the *Crowding-Out* and *Crowding-In* Positions in the Czech Republic¹

Marie HLADKÁ – Vladimír HYÁNEK – Jiří ŠPALEK*

Abstract

Due to their heavy dependence on financial support from the public sector and close links to a wide range of government policies, non-profit organisations (NPOs) are becoming increasingly state-oriented. Although economic experts have striven to empirically test whether public funding of the non-profit sector (NPS) supports private philanthropy or, on the contrary, crowds-it out, there is no comprehensive research of this type within the Czech Republic. In connection with these blank areas in theories on the Czech non-profit sector, we pose the following question: How does public financing of NPOs influence the amount of private donations that these organisations receive? To answer this question, we conducted our own research (n = 483). The results demonstrate a crowding-out effect for public resources but not for other types of financing sources, such as revenues from the organisation's own activity and commercial revenues.

Keywords: *crowding-in, crowding-out, non-profit organisation, non-profit funding, public subsidies, unearned revenues*

JEL Classification: H31, H71, D14

Introduction

The non-profit sector (NPS) and non-profit organisations (NPOs) are often subject to research conducted in particular by social scientists and economists because they represent democratic values and are an expression of solidarity and

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social conscience as well as the advanced level of a country's economic development. The NPS's form and scope differ by country, but it is certain that the government and this sector influence one another (Young, 1983; Hyánek, 2011). Theories regarding the importance of the NPS as well as theories about the relationships between the government and the NPS have led to the conclusion that public policy towards the NPS is carried out in particular through financing and legal regulations (Andreoni and Payne, 2003; Stadelmann-Steffen, 2011; Verschuere and De Corte, 2014). The government supports the NPS through financing and by creating a legal framework that enables the activities, operations, and status of NPOs. At the same time, the participation of representatives of NPOs is required in the processes of developing such policy.

Issues related to the financing of NPOs must be perceived as issues related to typical multi-source financing (Salamon, 1997; Froelich, 1999; Kuvíková and Vaceková, 2009; Sokolowski, 2013). To fund their activities, these organisations use their own resources (e.g. membership fees, revenues from their activities), sponsors' donations, and subsidies from national or municipal budgets or private entities. It is not easy to bring the long-term sustainability of a NPO into accord with this variability of financing sources and financial management, and so this is rightfully one of the key areas of successful management of NPOs (Bowman, 2011; Valentinov and Vaceková, 2015). Government activities can influence private charitable giving in two ways. First, tax incentives can stimulate private charitable giving. Second, contributions made by private donors can be influenced by government funding of public goods and services. There have long been economic debates over the relationship between government funding of the NPS and private donations. The first hypothesis suggests that government funding substitutes for (*crowds-out*) private charitable donations (Andreoni and Payne, 2003; 2011; Isaac and Norton, 2013). However, a contrasting hypothesis claims that governmental support attracts (*crowds-in*) private giving (Okten and Weisbrod, 2000; Brooks, 2000; Sokolowski, 2013). This question has a real impact on both NPOs and government representatives who make decisions about aid. Tinkelman (2010) argues that findings regarding the relationship between governmental financial support and private donations depend strongly on research design. The variety of findings encourages the question of which conditions influence the relationship between government funding and private donations. De Wit and Bekkers (2016) state that different results arise partly from methodological differences and partly from contextual differences.

This paper contributes to *crowding theories* as follows. First, it summarizes the aforementioned issues within the context of the Czech Republic. Second, it presents a new macro-level dataset and tests *crowding theories* on the basis of an aggregate model that includes all sub-sectors of the NPS in the Czech Republic.

The aim of the paper is to answer to the following research questions.

RQ1: *How does public financing of NPOs in the Czech Republic influence the amount of private donations that these organisations receive?*

RQ2: *What other factors influence private charitable giving in the Czech Republic?*

1. Multi-source Financing of Non-profit Organisations

Non-profit organisations make use of various sources of income to achieve their mission and carry out activities related to it. Some NPOs depend significantly on income from private donations, others on income from public budgets or fees received for services rendered or products delivered (Kuvíková and Vaceková, 2009). Representatives of many organisations think that diversification of their income portfolio will help them through hard times when one of their sources of revenue may be considerably diminished (Froelich, 1999). For this reason, economic experts as well as others have for several decades been posing the question of how these varied sources influence one another (Svidroňová and Vaceková, 2012).

Generally, financing sources for private NPOs can be divided according to various criteria and classifications (Kuvíková and Vaceková, 2009). Examples of such classifications include distinguishing between domestic and foreign sources, financial and in-kind resources, and revenues from external sources and those from the organisation's activities. For our purposes, we will divide funds for NPOs into three major categories of financing sources: public sources, private sources, and revenues from the organisation's activities. As some authors (Froelich, 1999; Anheier, 2005) have indicated, variability of financing sources is characteristic for NPOs, thus distinguishing the NPS from governmental organisations that are largely funded from public budgets, meaning from taxes and fees, and profit-making organisations that mostly depend on payments from customers. While the variability of financing sources can protect NPOs from excessive dependency on a single source, it can also give them less power to control their sources of revenue in comparison to governmental and profit-making organisations (Gronbjerg, 1991).

Sokolowski (2013) presented an apt model of financial flows to the NPS based on a classification of various types of payments (transfers [grants, subsidies, donations], market payments, and property income) and the sources of these financial flows (government, households, and companies – private businesses). In national accounting, government payments for services provided to individuals (T2) are termed transfers to households. In the model presented by Sokolowski (2013), these transfers were considered payments made by the government to

NPOs because the availability of such financing depends on public policy rather than individual decisions made on the market. In most developed countries, such payments comprise most of the financial resources received by NPOs. Salamon (1997) states that fees and payments for products and services represent a key source of income (the mean proportion among 12 developed countries was 43%, while in the Czech Republic it is only 25%). The remaining part of governmental payments comprises subsidies given directly to the non-profit sector (T1). Government reimbursements for services rendered to individuals (T2) are treated as transfers to households, which are then used to pay for the received services. However, for the purpose of this paper, these transfers are treated as government payments to NPOs. Private charitable giving includes donations of money and other assets to NPOs from households (T3) and private businesses (T4). Market purchases comprise payments made by households (M1) and private businesses (M2) for goods and services received from NPOs. Finally, property income (P1) represents the revenues that NPOs obtain from their investments, leases of their property, and so on. Sokolowski further integrated market revenues and property income into the single category of earned revenues. In summary, it can be stated that revenues of NPOs come from the following three groups: governmental payments (T1 + T2), private charitable giving (T3 + T4), and earned revenues (M1 + M2 + P1). These three revenue categories influence one another.

Subsidies from public budgets can flow to the NPS through several channels. The first is procurement of public services (e.g. social services, cultural services). The second is subsidies provided under ministerial and inter-ministerial policies (e.g. anti-drug policies, integration of foreigners). The third is subsidies to support NPOs' activities (support to associations operating in the regional educational system, consumer protection, cultural and compatriot relationships). The fourth is subsidies to meet legal requirements (e.g. voluntary service).

Private charitable giving comprises donations from individuals, companies, and foundations. These sources of revenue are provided on a voluntary basis. The terms philanthropy, private charitable giving, and charity are relevant even beyond the NPS (Hladká and Hyánek, 2015). What is interesting about these terms is that they represent inherently cross-cutting themes. According to Lloyd (2004), philanthropy is essentially a mechanism through which people can express their humanitarian impulses and confirm their membership in the larger society.

2. Crowding Theories

The amount of charitable giving may be influenced by the public financing provided to NPOs. Studies have confirmed that public subsidies can *crowd-out* private donations. Nevertheless, the importance of this influence differs across

studies (Andreoni and Payne, 2003). While some authors have argued that private donations are *crowded-out* by public financing (e.g. Andreoni and Payne, 2003; Andreoni, 2004; Simmons and Emanuele, 2004), other authors hold the opinion that such support is necessary for the existence of NPOs because it contributes to the growth of private philanthropy.

The *crowding-out* effect has two causes (Lammam and Gabler, 2012). The more funds obtained from tax revenues are provided by the public sector to NPOs, the more donors from the private sector feel that their duty or personal desire to contribute has been met. This result is defined as *classic crowding-out*. This phenomenon occurs in situations where NPOs seeking to obtain public financing require fewer resources (both financial and human) to obtain financial means from private donors. The more public funds a NPO obtains, the less it is motivated to try to obtain private financial resources.

Svoboda (2010) considers possible *crowding-out* of private financing to be an important issue that should be addressed because it provides an answer to the question of whether the financing of NPOs from public budgets should be considered efficient or whether this support is fiscally neutral. In his reflections, in accordance with Eckel and Grossman (2004), Svoboda submitted variants of various effects of government subsidies on private charitable giving that can be seen in Table 1. Donors' motivation and the potential existence of fiscal illusion also play roles in the effects.

Table 1
Theoretical Predictions of Government Subsidies' Impact on the Crowding-Out of Private Donations

| Motivation for giving | Assuming the existence of fiscal illusion | Assuming the non-existence of fiscal illusion |
|---------------------------------|---|---|
| Altruism* | Full <i>crowding-out</i> | Full <i>crowding-out</i> |
| Feeling of inner satisfaction** | Partial/no <i>crowding-out</i> | Full <i>crowding-out</i> |
| Imperfect altruism*** | Partial <i>crowding-out</i> | Full <i>crowding-out</i> |

Note: Can be considered identical with the * Public goods model, ** Private consumption model, *** Impure altruism model (according to Hladká and Hyánek, 2016).

Source: Revised from Svoboda (2010).

Svoboda states that if there is a fiscal illusion with taxpayers being unable to recognize the sources of projects paid from public finances, the *crowding-out* effect is diminished. It is apparent from Table 1 that the answer to whether *crowding-out* of private donations exists is considerably complicated because we usually do not have information about the major motivation behind donors' behaviour or the degree of fiscal illusion.

On an aggregate level (nationwide government spending and the nationwide level of private charitable giving), these theories have been tested since the

1970s, for example by Abrams and Schitz (1978), Schiff (1985), and Kingma (1989). Emphasis was initially placed on full *crowding-out*, and such studies tested whether government funds *crowd-out* private charitable giving on a dollar-for-dollar basis. The results showed that *crowding-out* was only partial, and so subsequent research focused on the conditions under which such *crowding-out* might occur.

Brooks (1999; 2000a; 2003; 2004) followed on this initial research at an organisational level, presenting the idea of a *curvilinear relationship* – public financing supports private charitable giving only to a certain level, after which the amount of private donors' contributions starts decreasing (Brooks, 2000b). Such a curvilinear model for how public financing affects private charitable giving has not been tested empirically as often as the simple linear model has. Given that it expects that the *crowding-in* and *crowding-out* effects are not necessarily incompatible, the model thus presents several consequences (Brooks, 2000b) for representatives of public policy and the NPS. First, it claims that either of these two effects can occur and NPOs should steadily substitute one for the other. Second, it expects that both unearned income and private donations can be maximized concurrently. Third, it explains the “subsidy trap” in which some NPOs get gradually bogged down as a result of illiquidity and administrative short-sightedness due to a reliance on public financing levels corresponding to their total income.

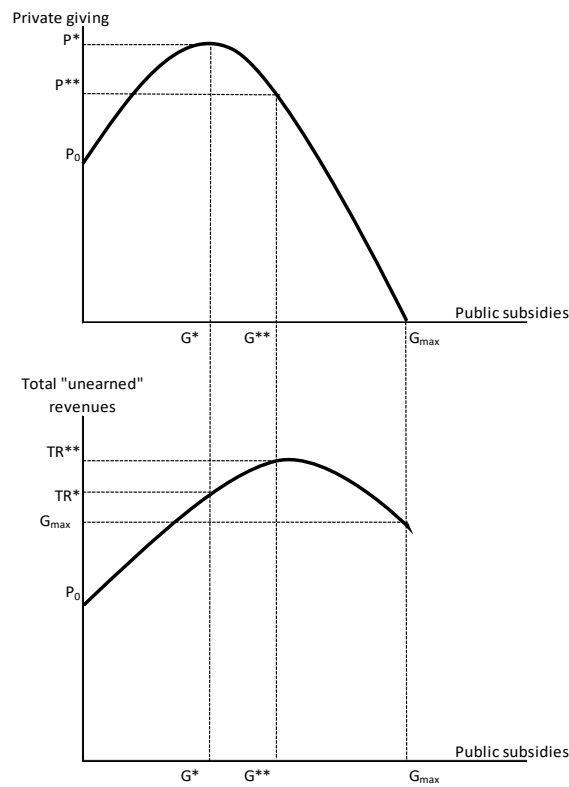
Brooks presented his hypothesis for the concurrent existence of two seemingly incompatible effects in the following economic model. A typical non-profit organisation obtains unearned revenues from both governmental funding (G) and the private sector (P). Private donors can be expected to respond with their donations to the amount of governmental funding as well as many other variables (X). If an organisation has zero income from public budgets, the level of its unearned revenue is $P_0 > 0$ as result of private charitable giving. If its public financing becomes positive, it is possible to see in the given scheme that private charitable giving gradually grows. As soon as the amount of public financing exceeds a certain level ($G^* > 0$), the *crowding-out* effect begins. Donors start seeing organisations that are financed significantly from public budgets as quasi-public organisations, and because very few individuals would like to voluntarily donate to public budgets, a decreasing number of people are willing to donate to these organisations.

The sharp concavity of the curve captured by the model may seem to be a strong premise at first sight. Nevertheless, including it means limiting as much as possible the number of additional premises influencing the relationship between private and public sources from entering the model. In the absence of

other premises, it is possible to prevent the stimulation effect from accelerating prior to the critical point as well as the *crowding-out* effect from decelerating beyond the critical point.

Figure 1

The Relationship between Total Unearned Revenues and Public Subsidies



Source: Brooks (2000b).

The relationship captured in the model can be mathematically described as follows:

$$P = P(G, X)$$

where $P \in \mathcal{R}_+$, $X \in \mathcal{R}_+^n$, and $G \in [0, G_{max}]$, where $G_{max} \in [G^*, \infty)$ represents the situation where a non-profit organisation is fully financed from public resources and all private donations are *crowded-out*. Moreover, it is true for all values $G > 0$ that $P'(G^*, X) = 0$ and $P''(G, X) < 0$. This indicates the presence of a single global maximum of P , P^* , corresponding to the value of public financing G^* . This is a very important premise: there is no concurrence between P and G . While G influences P , the inverse does not occur.

The bottom part of Figure 1 captures the natural extension of the model to the relationship between G and total unearned revenues (TR), defined as follows:

$$TR = P(G, X) + G,$$

where TR is the concave function of governmental financing, with $TR'' = P'' < 0$. By maximizing TR with respect to G , we obtain $TR' = P'(G) + 1 = 0$, which means

$$P'(G^{**}) = -1$$

From the concavity of P , we can draw the conclusion that $G^{**} > G^*$. G^{**} is the turning point at which TR start decreasing when public subsidies rise. This mutual relationship has consequences. First, the model suggests that there is a level of public subsidies at which the subsidies are too high to maximize unearned revenues. Specifically, all funding levels exceeding G^{**} will decrease TR under its maximum of TR^{**} . Second, when TR is at its maximum of TR^{**} , there will be *crowding-out* between governmental funding and private charitable giving. This is represented in the model in the fact that G^{**} is to the right of G^* and thus is situated on the descending part of the $P(G)$ curve. When public financing increases beyond this point, private charitable giving decreases. Non-profit organisations should thus accept public support up to G^{**} and with it private donations up to P^{**} . However, organisations are not actually able to secure the proper level of support or might not necessarily understand these relationships. As a result, organisations may move along any part of the $P(G)$ curve. *Crowding-in* occurs within the section from $G = 0$ to G^* , while *crowding-out* occurs from G^* to G_{max} . This fact may explain why empirical studies have presented opposing results regarding *crowding-out* effects.

3. Methodology and Data

In general, four types of data are used to test the relationship between public support and private giving, namely data from laboratory experiments, data from survey experiments, archival data (financial information), and micro-level survey data (De Wit and Bekkers, 2016). To explore *crowding theories* in the Czech Republic, we decided to use our own survey data. Based on the potential of these data, we built our own research design.

This article presents some results from an extensive project aimed at determining the influence of public financing on the structure of resources and production of NPOs in the Czech Republic. This project used a quantitative questionnaire submitted by NPOs (panel data). Generally, the project studies how changes in revenues from public sources influence the operations and sustainability of NPOs in the Czech Republic.

A questionnaire was used to collect information directly from NPOs about the amount of their total revenues. Special attention was paid to the division into public and private sources as well as revenues from capital and from the organisation's economic activity, including non-financial revenues. We investigated NPOs' total revenues in 2013 and retrospectively for 2008. The basic sample consisted of all NPOs that were active as of 31 December 2013 and that had existed in 2008 (105,522 organisations in total). After those organisations that did not meet the basic characteristics of a had been removed, we obtained a new sample of 80,000 organisations. In total, we obtained information from 483 NPOs. The research focused on a broad topic – the financing of NPOs – from which only some data will be used for the analysis presented in this article.

Although our research was focused in particular on the impacts of public financing on private giving, it is obvious that the amount of private donations is influenced by many other variables (De Wit and Bekkers, 2016). These factors include in particular other revenue sources (see Heutel, 2012; Sokolowski, 2013) and organisational factors treated herein as control variables (Stadelmann-Steffen, 2011; De Wit and Bekkers, 2016). Although we tested a variety of possible control variables, there are many other relevant conditions that we were not able to test (they were not included in the survey). We included five control variables in the analysis (employee, volunteer, fundraiser, origin, assets). Table 2 outlines the relevant factors included in the aggregate model.

Table 2

Independent Variables in the Model

| | Variables | Conceptual Model Factors |
|--------------------------|--|--|
| Funding source variables | Donations _{<i>t</i>} Public financing _{<i>t</i>} Public financing _{<i>t-1</i>} Market revenues _{<i>t</i>} Membership fee _{<i>t</i>} Commercial revenues _{<i>t</i>} Collections _{<i>t</i>} Total revenues _{<i>t</i>} | Private donations in 2013 (CZK thous.) Public financing in 2013 (CZK thous.) Public financing in 2008 (CZK thous.) Revenues from sales of assets, services, and goods (CZK thous.) Membership fee (CZK thous.) Income from commercial activities (CZK thous.) Income from charitable fundraising (CZK thous.) Total (unearned + earned) revenues (CZK thous.) |
| Control variables | Employee Volunteer Fundraiser (dummy) Origin Assets | Number of employees (full-time equivalent); categorized into four categories Number of volunteers (full-time equivalent); categorized into four categories The organisation's fundraiser Date of organisation's establishment; categorized into six categories The organisation's total assets; categorized into ten categories |

Note: Categories for Employee and Volunteer: 0, 1 – 9, 10 – 49, 50 and above.

Categories for Origin: before 1990, 1990 – 1994, 1995 – 2000, 2001 – 2004, 2005 – 2008, 2009 – 2012.

Source: Authors.

Because we did not have any results available from longitudinal research, it was not possible to include other factors potentially influencing the amount of private donations (Wilsker, 2011). Such factors would include indicators characterizing the country's political climate and economic conditions. Salamon (1997) noted that ruling parties with right-wing beliefs perceive the NPS as a possible way to maintain governmental finances at a low level and so encourage citizens to support NPOs that will render necessary services. On the other hand, Salamon stated that representatives of left-wing parties perceive NPOs as an obstacle to a strong welfare state. The influence of inhabitants' individual income on their decisions about making donations is often studied as an indicator of a country's economic conditions. A number have studies have found a positive relationship between incomes and the rate of charitable giving (e.g. Kitchen, 1992). Gittel and Tebaldi (2006) determined that a country's growth of per capita income increased the average per capita rate of charitable giving. Income significantly influenced charitable giving. Higher-income inhabitants usually make donations at a rate higher than other groups such as women, older people, and individuals with a higher socio-economic profile.

As noted above (Sokolowski, 2013), NPOs depend on three primary revenue sources – governmental sources, private sources, and earned income. Each of these sources may influence private charitable giving. The present paper devotes its attention to an analysis of governmental funding, and potential impacts from governmental funding have been described herein above.

An analysis based on multiple regression (ordinary least squares; OLS) was used to find values of the dependent variable among a linear combination of values of independent variables. The goal of the regression analysis was to describe this dependency by means of a suitable (mathematical) model using the following formula: $Y = b_0 + b_1X_1 + b_2X_2 + \dots + E$, where Y is a dependent variable and X is an independent variable. Here, we mark the parameter representing the position of the straight line as b_0 , while E represents the model's accidental error.

Ordinary Least Squares regression was processed for 4 models, which differed at two levels: 1) whether they included *Total revenues*, and 2) whether the data was transformed using the *natural logarithm* (Ln).

Regression outputs were tested against the following indicators:

- Accuracy of regression coefficients: first, the model was tested as a whole (overall F-test); second, individual regression coefficients were tested with t-tests.
- Multicollinearity: testing of pairwise correlation coefficients (data not shown), partial coefficient of multiple determination, colinearity statistics – the values of Tolerance and variance inflation factor (VIF).

4. Empirical Evidence and Interpretation

The following section presents descriptive statistics and regression results of the factors entering the OLS model, namely the statistical indicators of the funding sources variables and some control variables. Descriptive statistics provide information about the data set obtained from a total of 483 responses.

Table 3
Descriptive Statistics

| | Minimum | Maximum | Mean | Std. deviation |
|---------------------------------|---------|-----------|----------|----------------|
| Public financing _t | 0.00 | 34,298.00 | 1,121.52 | 3,750.47 |
| Public financing _{t-1} | 0.00 | 36,435.00 | 804.34 | 2,904.80 |
| Private donations | 0.00 | 13,600.00 | 111.67 | 720.94 |
| Market revenues | 0.00 | 29,700.00 | 626.33 | 2,549.74 |
| Membership fee | 0.00 | 19,996.00 | 101.19 | 1,058.93 |
| Commercial revenues | 0.00 | 1,930.00 | 33.02 | 162.15 |
| Collections | 0.00 | 734.00 | 4.21 | 40.36 |
| Total revenues | 0.00 | 49,903.00 | 2,088.02 | 6,127.89 |
| Employee | 0.00 | 3.00 | 0.58 | 0.79 |
| Volunteer | 0.00 | 3.00 | 0.99 | 0.97 |
| Origin | 1.00 | 6.00 | 2.99 | 1.08 |
| Assets | 1.00 | 10.00 | 4.10 | 2.07 |

Source: Authors.

The data show that public financing was the predominant source of funds for NPOs, both in absolute terms (expressed as the maximum) and in relative terms (expressed as the mean). Organisations that had entered the market of goods and services and thus obtained significant market revenues made up a significant proportion of the studied sample. In contrast, the sample contained a very small proportion of private charitable giving in total revenues. The organisations represented in the studied sample have a rather long history, with the average year of establishment falling within 1995 – 2000. The organisation with the highest number of volunteers (3,500) is the Czech Tourist Association. The organisation with the highest number of employees (1,380) is the Diaconia of the Evangelical Church of the Czech Brethren.

The regression model included a formal test of the relationship between public financing and private donations. OLS regression was processed for 4 models:

- Model A: Includes *Total revenues*
- Model B: Does not include *Total revenues*
- Model C: Includes *Total revenues*; data Ln transformed
- Model D: Does not include *Total revenue*; data not Ln transformed.

Table 4 presents all regression results for all four models. The results show that models including *Total revenues* (models A and C) are not suitable. This variable causes critical collinearity in the model ($VIF > 10$, $Tolerance < 0.2$). The last model (Model D) is similarly not suitable. Testing the partial regression coefficients via a t-test shows the unsuitability of Model D, as the model parameters are not significant.

The model most suitable to describe the data thus appears to be Model B. According to the OLS model, the adjusted R squared shows that Model B explains 35% of the dependent variable's variability. This means that the model manages to explain more than one-third of the variability in donations provided; it is necessary to explain the remaining variability through other variables. Because R^2 can be artificially increased by increasing the number of variables used the analysis, we have stated adjusted R squared, which takes the number of variables into consideration. The result of the analysis of variance (ANOVA), the second output from the regression analysis, shows us whether or not the model is suitable for the data because it measures the difference between the actual data and the data generated by the regression model. Table 4 presents F values (should be > 1) and their significance (should be < 0.05). In our case, the F-test for Model B resulted in a test statistic of 6.8 that was significant, which means that the calculated regression model is suitable.

Table 4 shows the regression results and captures the relationship between the tested variables and private charitable giving. Model B demonstrates a *crowding-out* effect for public financing and the amount of donations. The rate of this relationship is minimal (-0.0001). Thus, it cannot be claimed that governmental financing plays a key role in *crowding-out* private charitable donations to the NPS in the Czech Republic. If we relate the regression results to the aforementioned hypothesis of a curvilinear relationship (Brooks, 2000b), we would place these empirically tested NPOs in the descending section of the curve $P(G)$, but just beyond the curve's local maximum. The relationship between total revenues (captured in Model A and Model C) and revenue from private charitable giving is positive, from which it is possible to derive the position of TR as between G^* and G^{**} .

Nearly all of the sources of revenues (apart from revenues from public charitable fundraising and public financing from previous years) also significantly contributed to the model. We can see *crowding-in* effects for all variables except for revenues from collections. When organisations obtain sufficient income from their revenues, membership fees, or commercial income, a similar level of *crowding-in* occurs. If a NPO is aware of the fact that the *crowding-in* effect is comparable for individual alternative sources (outcome), it should consider the costs of obtaining an alternative source (input) when making decisions regarding diversification of sources.

Table 4
Aggregate Regression Models

| | MODEL A (with TR) | | | | MODEL B (without TR) | | | | MODEL C (LN - numexpr, with TR) | | | | MODEL D (LN - numexpr, without TR) | | | | | | | |
|----------------------------------|-----------------------------|------------|-------------------------|--------|-----------------------------|----------|-------------------------|-----------------|---------------------------------|-------|-------------------------|------------|------------------------------------|--------|-------------------------|------------|-----------|-----------------|--------|-------|
| Independent variables | Unstandardized Coefficients | | Collinearity Statistics | | Unstandardized Coefficients | | Collinearity Statistics | | Unstandardized Coefficients | | Collinearity Statistics | | Unstandardized Coefficients | | Collinearity Statistics | | | | | |
| | B | t (Sig t) | Partial Correl. | Toler. | VIF | B | t (Sig t) | Partial Correl. | Toler. | VIF | B | t (Sig t) | Partial Correl. | Toler. | VIF | B | t (Sig t) | Partial Correl. | Toler. | VIF |
| (Constant) | -96.035 | | | | | -103.528 | | | | | 1.484 | | | | | .860 | | | | |
| Public financing _{it} | -.229 | 9.382 *** | -.446 | .034 | 29.779 | -.001 | -.075 *** | -.004 | .221 | 4.522 | -.001 | -5.517 *** | -.487 | .014 | 71.404 | -1.928E-05 | -.293 | -.029 | 1.62 | 6.175 |
| Public financing _{it-1} | .011 | .828 | .044 | .170 | 5.899 | .009 | .628 | .033 | .170 | 5.898 | 3.030E-05 | .415 | .042 | .139 | 7.180 | -5.849E-06 | -.070 | -.007 | 1.40 | 7.122 |
| Market revenues _{it} | -.247 | 8.389 *** | -.407 | .068 | 14.612 | .031 | 2.517 *** | .132 | .506 | 1.977 | -.001 | -5.556 *** | -.489 | .033 | 29.872 | -4.577E-05 | -.555 | -.056 | .300 | 3.331 |
| Membership fee _{it} | -.249 | 4.836 | -.249 | .291 | 3.440 | .092 | 2.074 ** | .109 | .506 | 1.977 | -.002 | -4.012 *** | -.376 | .114 | 8.742 | .000 | .949 | .095 | .346 | 2.890 |
| Com. revenues _{it} | -.046 | -.356 *** | -.019 | .892 | 1.121 | .173 | 1.200 ** | .063 | .918 | 1.089 | -.001 | -1.074 | -.108 | .871 | 1.148 | .000 | .234 | .024 | .922 | 1.084 |
| Collections _{it} | .127 | .315 | .017 | .804 | 1.244 | -.209 | -.458 | -.024 | .809 | 1.236 | .002 | .786 | .079 | .713 | 1.402 | .000 | -.052 | -.005 | .729 | 1.371 |
| Total revenues _{it} | .233 | 10.151 *** | .474 | .016 | 63.949 | | | | | | .001 | 5.669 *** | .497 | .006 | 170.195 | | | | | |
| Employee _{it} | 31.039 | 1.016 | .054 | .504 | 1.983 | 19.685 | .569 | .030 | .505 | 1.981 | .004 | .166 | .017 | .135 | 7.428 | .050 | 1.899 * | .187 | .151 | 6.605 |
| Volunteer _{it} | -16.430 | -.894 | -.047 | .912 | 1.096 | -20.732 | -.995 | -.053 | .913 | 1.096 | .295 | 1.752 | .174 | .837 | 1.195 | .265 | 1.374 | .137 | .838 | 1.194 |
| Fundraiser _{it} | 69.265 | 1.793 * | .095 | .841 | 1.189 | 72.295 | 1.650 * | .087 | .841 | 1.189 | .284 | .889 | .089 | .781 | 1.281 | .328 | .895 | .090 | .781 | 1.280 |
| Origin _{it} | 14.580 | .893 | .047 | .898 | 1.114 | 12.000 | .648 * | .034 | .898 | 1.113 | .325 | 2.184 ** | .215 | .836 | 1.196 | .407 | 2.394 ** | .234 | .844 | 1.188 |
| Assets _{it} | 16.143 | 1.499 | .079 | .637 | 1.569 | 26.828 | 2.207 ** | .116 | .643 | 1.554 | .091 | .915 | .092 | .561 | 1.784 | .230 | 2.088 ** | .205 | .597 | 1.674 |
| Adjusted R ² | .600 .338 | | | | .417 .348 | | | | .691 .413 | | | | .553 .229 | | | | | | | |
| ANOVA – F statistic | 16.599*** | | | | 6.794*** | | | | 7.46*** | | | | 3.969*** | | | | | | | |

Note: * $p < .10$, ** $p < .05$, *** $p < .01$. Dependent variable: Private Donations.

Source: Authors.

The model also included control variables that define an organisation's basic characteristics and can influence the amount of private donations. It is an aggregate model that includes all sub-sectors of the NPS. The key factor is whether an organisation employed a paid fundraiser (or had a volunteer in the position of fundraiser). Such a position significantly influenced the obtaining of private donations. Another significant factor was the organisation's age as expressed by the year of its establishment. The younger the organisation was (with categories comprising 4-year periods), the more (CZK 12,000) private donations it obtained. The model captures a negative relationship between private donations and the level of the organisation's donor base. The more an organisation was based on volunteers, the less (CZK -21,000) donations it obtained. The result regarding the relationship between private donations and the amount of assets was not surprising. According to the regression model, there was a positive relationship between an increasing amount of assets and the amount of donations.

When NPOs obtain financing from public budgets, contributions from private donors may decrease for two reasons. The first is as a consequence of the *crowding-out* effect as described in this paper. The second reason is decreasing efforts by fundraisers to raise money from private donors. Theoretical models have been used to study whether it is fundraisers rather than donors who are *crowded-out* by public subsidies (Andreoni and Payne, 2003).

5. Discussion and Conclusion

The current paper posed the question of how public funding of NPOs in the Czech Republic influences the amount of private donations that these organisations receive. The answer was given by testing *crowding theories* empirically. The testing was based on the assumption that the *crowding-in* and *crowding-out* effects are not mutually incompatible. A low level of public subsidies has the potential to stimulate private philanthropy while a high level might have the opposite effect. The relationship between public subsidies provided to the NPS and private charitable giving depends on their mutual relative importance.

Based on the empirical results presented herein, we can say that the *crowding-out* effect occurred with respect to the selected sample of Czech NPOs. Government financing played a decisive role in the diversification of financing sources of NPOs. The high level of government financing to the NPS is likely based on the assumption that expenses are not influenced by private donors' behaviour. There are many potentially acceptable reasons why the given *crowding-out*

effect might have occurred. First, the general public wants to support projects and organisations and weaken the government's responsibility for their financing in this manner. If a substantial part of an organisation's income is comes from public funds, it starts to become a quasi-public agency (Friedman and Friedman, 1980) in donors' eyes. Second, support to NPOs makes them "*non-mainstream*" and so it becomes not absolutely necessary to support them in a non-market manner. Donors, and in particular corporate donors, might be discouraged from making a donation by the perception of NPOs as strong and independent entities (Laurie, 1994). Third, many private donors continue funding NPOs only for such time as they are able to control the given organisation (Odendahl, 1990), and governmental interventions can threaten this mechanism of control. Finally, taking into account the fact that government subsidies are based on taxes, an increase in such support to NPOs might lead to fewer resources available from individuals.

Of course, there are limitations to the results of the OLS model. First, the model was constructed from a sample size of 483, which is approximately 0.6% of all organisations in the core sample. For this reason, the results cannot be related to the entire NPS. It is not a representative survey, but rather a research probe, mapping the empirically lacking area of scientific interest in the Czech Republic. Second, the research method did not make it possible for data to be submitted for several calendar years in sequence. Therefore, the model does not include the important factor of time. In the real economy, a time shift occurs when a behaviour is changed in response to an economic incentive. If the government finances a NPO in year t , the effect from *crowding theories* will probably be known no sooner than in the subsequent year $t + 1$. Donors will not respond simultaneously to an increase in public support by changing their behaviour as donors. (The model includes only *public financing* _{$t-1$} , meaning public financing in 2008). Third, an aggregate micro-economic model has been submitted but was not included in the model. The authors did not have macro-economic data available for the entire NPS.

Finally, this article brings new information, thus contributing to the public debate about multi-source financing of the NPS. Of course, our conclusions are preliminary and it is necessary to continue testing them in future.

However, we believe that the results of our work could serve as the basis for a proper understanding of mutual relationships among individual sources. It is important that donors, NPOs, and government representatives (politicians) be aware of possible impacts resulting from public financing of the NPS. If governmental support is to complement private donations and non-profit managers are aware of this fact, this mutual relationship can be used in a strategic manner

(ignoring it would mean wasting an opportunity). It is important to understand this stimulation effect and take optimal advantage of it. Government representatives enriched with this information can better aim their budgets at specific outcomes (De Wit and Bekkers, 2016). If public financing substitutes for private charitable giving, government representatives and politicians should know the mechanism forming the basis for one source of revenues to substitute for another. They can also work with the information that their funds do not generate the additional benefits they had originally expected. Non-profit managers can save a considerable amount of effort they had wasted striving to generate financial revenues from both sources concurrently (Verschuere and De Corte, 2014).

How donors react to changes in government financing can be studied in future along several lines.

First – *individual behaviour*: economic theories of rational choice in social behaviour (Warr, 1982; Roberts, 1984) assume that donors include in their utility functions a certain contribution to the public good. We can pay attention to the factors influencing donors' behaviour in existing research (Hladká and Hyánek, 2016) in relation to utility.

Second – *organisational behaviour*: the negative relationship between public subsidies and private donations may be affected by the behaviour of NPOs. Sources of financing influence the level of fundraising efforts (Andreoni and Payne, 2011; Hughes, Luksetich and Rooney, 2014). Several indicators can be used to measure fundraising efficiency, with return on investment among the most important indicators. This is the ratio between the revenues obtained thanks to a given idea or fundraising method and the costs required for implementation. Another indicator is net income, which is the amount that an organisation actually obtains through fundraising.

Third – *individual heterogeneity*: previous studies have paid little attention to different groups of donors. We can take inspiration from several studies (Reeson and Tisdell, 2008; Luccasen, 2012; Bekkers and Wiepking, 2011) which have focused on such factors as different income groups, genders, social classes, and education levels.

Fourth – *organisational heterogeneity*: the last possibility that might help to clarify inconclusive results about the *crowding-out* effect is that private charitable giving is affected differently in different sub-sectors of the NPS (Borogonovi, 2006; Brooks, 2000a). As noted by Steuerle and Hodgkinson (2006), diversity in the NPS vanishes at an aggregate level. Stadelmann-Steffen (2011) argues that *crowding-out* is most likely to occur in sectors where they are in direct competition.

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