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On the Dynamic Relationships Between the Non-profit and Public Providers of Welfare Services in European Union

Acerca de la Relación Dinámica entre los Proveedores sin Fines de Lucro y los Proveedores Públicos de Servicios de Asistencia Social en la Comunidad Europea

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Abstract. Economic activity in a mixed economy is shared among different kinds of organizations: private for-profit, private non-profit and governmental organizations, which are closely interdependent among them. For a long time the private non-profit sector has been considered as a marginal sector that rises only in the wake of the failure of both the market and government. Indeed, it is likely that there exist important spillovers among non-profit, for-profit and public sectors, particularly in the provision of welfare services. This paper analyses the way European countries deal with the provision of welfare services. Univariate and multivariate econometric tests in order to search for the existence of a common European model of welfare services provision based on the relationship between non-profit and public providers were used. The main evidence provided by this analysis does not fully support the existence of a common and unique European model of welfare services provision.

Keywords: Public economics, non-profit sector, European Union, cluster analysis.

Resumen. La actividad económica en una economía mixta es compartida entre diferentes tipos de organizaciones: privadas con fines de lucro, privadas sin fines de lucro y organizaciones gubernamentales, las cuales son altamente interdependientes entre sí. El sector privado sin fines de lucro ha sido considerado durante mucho tiempo como un sector marginal que aparece sólo como consecuencia del fracaso tanto del mercado como del gobierno. De hecho, es probable que existan efectos positivos importantes entre los sectores sin fines de lucro, con fines de lucro y públicos, particularmente en la provisión de servicios de asistencia. El presente estudio analiza la manera en que los países de la Comunidad Europea manejan la provisión de servicios de asistencia. Se aplicaron pruebas econométricas univariantes y multivariantes para buscar la existencia de un modelo Europeo común de provisión de servicios de asistencia basada en la relación entre proveedores sin fines de lucro y proveedores públicos. La evidencia principal de este análisis no apoya completamente la existencia de un modelo Europeo común y único de provisión de servicios de asistencia.

Palabras clave: Economía pública, sector sin fines de lucro, Unión Europea, análisis cluster.

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INTRODUCTION

Economic activity in a mixed economy is shared among different kinds of organizations: private for-profit, private non-profit and governmental organizations. Although, many industries are mixed, only recently, researchers have been paying attention to the forces influencing the size, composition and financial structure of private non-profit organizations (Brice, 2006; Salamon and Anheier, 1998; Meriková, 2002). For a long time the private non-profit sector has been considered as a marginal, remedial sector that rises only in the wake of the failure of both the market and state (Kuvíková, 2004; Weisbrod, 1998). During the past a huge interest has begun to develop around the topic of non-profit sector. Actually, an increasing number of governments consider the non-profit sector as a strategically important actor in the mid-way between public and private sectors. Indeed, it is likely that there exists scope for important spillover among non-profit, for-profit and governmental sectors, particularly in the provision of welfare services (Salamon, Sokolowski and List; 2003). For the purpose of this study, we focus on education, health and social services because they share the typical characteristics of the public good and, at the same time, they are the most important functions performed by the non-profit sector acting as public provider.

The theoretical framework followed by this paper is the classical economics one. We start with the assumption that market is inefficient in the production of public and quasi-public goods and services (Stiglitz, 1988; Varian, 1998). Then, government must intervene in the market economy in order to meet the unsatisfied demand (Wolf, 1998). Anyway, government intervention is not free of charges. It brings it own costs for corruption, burocracy and malfunctions (Muller, 2006; Uramova, 2001; Cullis and Jones, 1992). A third sector might intervene and correct the inefficiency of both market and government (Anheier and Toepler, 1999; Weisbrod, 1998). Given the existence of an abundant and often controversial literature in the field of the non-profit sector, we concentrate on the main non-profit sector's economics theories, which focus on the relationships between public and non-profit providers of welfare services. We rely on the heterogeneity, interdependence, trust and social origin theory as a theoretical foundation of our empirical analysis (Salamon and Anheier, 1998; Matsunaga and Yamauchi, 2004; Marcuello and Salas, 2001).

The research sample includes 17 European countries. Data for the public and non-profit organizations providing educational, health and social services in Europe are taken from Raguseo and Kuvikova (2008). Several empirical tests will be performed in order to search for the existence of a common European model of welfare services provision based on the relationship between non-profit and public providers. As first step, the empirical analysis employs simple and multiple linear regressions performed separately and simultaneously for each welfare service industries. As second step, in order to better identify the existence of potential relationships between public and non-profit providers, the empirical analysis employs a cluster technique for preliminarily detecting similarity and dissimilarity in the way European countries deal with the provision of welfare services.

To the best of our knowledge, this is the first attempt in the literature that empirically tests the most well known non-profit sector's economics theories combining diverse econometric techniques. The analysis also focuses on the financial relationship between the public and non-profit sectors as a crucial explanatory variable.

The paper is organized as follows. Section 1 reviews the main non-profit sector's economic theories refereed in this study. Section 2, illustrates the empirical model. Section 3 shows and discusses the results. The last section concludes.

THE THEORY

In order to develop a model that describes the relationship between public and private non-profit providers of welfare services in Europe, we rely on the main non-profit sector's economic theories.

In the field of the non-profit sector, the leading theory is the heterogeneity theory (Weisbrod, 1988). According to this theory, the non-profit sector intervenes in the economy to meet the unsatisfied demand for public goods and services remaining as a consequence of failures of both the market and the state. The need for non-profit provisions would decline to the extent that the government provides a larger quantity of public services (ebo, 2005).

However, the substitutive relationship between public and private non-profit providers of welfare services is not the only way to analyze the linkages between the two sectors. In fact, next to the potential sources of conflict, there are also important elements of potential partnership. Salamon and Anheier (1998) have formulated an alternative method of analysis, known as the interdependence theory. According to this theory, a complementary relationship can be thought between the non-profit sector and the state in addressing public problems.

These two theories already provide some specific

hypotheses useful to identify the dimensional (substitutive or complementary) relationship between the public and non-profit providers of welfare services in Europe.

For the purpose of this study, we also pay attention to the non-profit sector's financial sources. Non-profit organizations can receive income from several sources: Government subsidies, private voluntary giving (i.e. philanthropy), and income generated through their own activity (i.e. membership fees and charges for services).

The heterogeneity theory offers interesting assumptions in terms of financial relationship between the public and non-profit sectors. Indeed, because the non-profit sector is viewed as a substitute of the public sector in the provision of welfare services, there should not be any reason to expect the income of non-profit organizations to be financed through governmental subsidies. This theory predicts that the non-profit sector would be financed mostly by private voluntary giving.

By contrast, the interdependence theory views the public and non-profit sectors as complementary in the provision of the basic welfare services. Thus, in order to stimulate the production of public welfare services, government will support the non-profit sector not only politically but also financially. According to this theory, government is an important source of financial aid for the non-profit sector (Salamon, Sokolowski and Anheier; 2000).

A third theory finds the rationale of non-profit sector in another form of market failure, arising from the existence of asymmetric information often facing consumers (Bryce, 2006; Gronbjerg and Paarlberg, 2001). When consumers cannot detect information asymmetry at low cost, they will seek alternative for trust in the quality of services provided. One such alternative is the non-profit sector. Because the non-distributing constraint, the prohibition of distribution of profits to owners, may be perceived as a sign of trustworthiness, which eliminates much of the information asymmetry problem, non-profit organizations are preferred. According to the trust theory, the services provided through the non-profit sector would be purchased from the market if sufficient trust were present. It follows that the financing of the provision of these services through the non-profit sector is likely to take a more commercial form. This suggests that the non-profit sector would be able to ensure the main share of income from its own activity, i.e. fees and service charges.

A fourth non-profit sector theory that we want to include in our theoretical framework is the social origin theory. This theory identifies diverse types of public/non-profit welfare regimes, each characterized not only by a specific role of the state in the provision of welfare services but also by a typical relationship between the non-profit sector and the public sector. The leading contribution to this theory has been given by Esping-Andersen (1990). This theory differentiates welfare regimes in terms of two key dimensions: the size of the public welfare sector and the size of the non-profit sector. The main prediction is the existence of different types of public/non-profit welfare regimes among European countries because the public and non-profit sectors are perceived as complements in the corporatist countries but as substitutes in the social democratic and liberal countries.

THE MODEL

Our model employs univariate and multivariate econometric tests against cross-sectional data for 17 European states. The sample countries includes Belgium, Austria, Ireland, Netherlands, Spain, Italy, United Kingdom, Germany, Romania, France, Poland, Finland, Czech Republic, Hungary, Norway, Slovakia and Sweden. The statistical data are the same as for Raguseo and Kuvikova (2008).

Our model of analysis follows a two-step approach to estimate the relationships between the public and non-profit welfare services providers in Europe. Preliminarily, we operationalize the concept of sector "size" in terms of relative expenditure as in Raguseo and Vlcek (2008). Expenditure data –for both non-profit and public sector– are expressed as a share of the Gross Domestic Product (GDP) in each country in order to remove any scale effect among countries.

As first step, the analysis employs ordinary least square (OLS) regression equations in order to measure the strength of the relationship between the two sectors. The equations are in Cobb-Douglas form and all variables are converted in natural logarithms so that the resulting equations are linear (Johnston and Dinardo, 1997). Following Raguseo and Kuvikova (2008) we use a pooled model, which allows for either fixed or random effects (Greene, 1997). The model for the case of k explanatory variables in cross-sectional observations by country i for each industry j can be stated as:

$$y_{ij} = \alpha_j + \sum_{k=1}^{4} \beta_k x_{k,ij} + \varepsilon_{ij} \qquad (1)$$

As second step of the analysis, in order to better identify the existence of potential relationships between public and non-profit welfare sectors among European countries, we employ a cluster technique for preliminarily detecting similarity and dissimilarity in the way European countries deal with the provision of the welfare services. Indeed, cluster analysis develops tools and methods useful when we want to see if some natural groups exist when considering objects in a data set. Our goal is to find natural groups (clusters) for which the objects (countries) within each group are similar, but the groups are dissimilar to each other. According to Hardle and Simar (2003), the starting point of a cluster analysis is a data matrix *D(n x p)* of *n* objects with *p* variables. Our variables include: the non-profit sector size (NPS), the size of the public sector (PUB), the government subsidies (GOV), the private philanthropy donations (PHI) and the income generated by non-profit sector through its own activity (OWN) in each country. In our analysis, we apply an agglomerative hierarchical clustering, which typically start with *n* clusters, one for each object, and end with a single cluster containing all *n* objects. The graphical representation, so-called dendrogram, displays the objects, the sequence of clusters and the distances between the clusters. The larger the distances, the more heterogeneous the clusters. Since cluster analysis attempts to identify the objects that are similar and group them into clusters, several techniques are based on indexes of similarity between each pair of observations. A convenient measure of similarity is the distance function between two observations. The most common distance function is the Euclidean distance between two vectors $x = (x_1, x_2, \ldots, x_p)$ and $y = (y_1, y_2, \ldots, y_p)$, defined as:

$$d(x,y) = \sqrt{(x-y)'(x-y)} = \sqrt{\sum_{j=1}^{p}(x_j - y_j)^2} \qquad (2)$$

For our model, based on the Ward's algorithm, it is necessary to take the square of the Euclidean distance:

$$d^2(x,y) = (x-y)'(x-y) = \sum_{j=1}^{p}\left\|x_j - y_j\right\|^2 \qquad (3)$$

Moreover, the agglomerative hierarchical clustering technique based on the Ward's method implies that given *n* objects with *p* variables, the sum of squares within clusters where each object forms its own group is zero. The Ward's method is also known as Incremental Sum of Squares because its algorithm for forming clusters joins objects based upon minimizing the minimal increment in the error sum of squares (Hardle and Simar, 2003). The dendogram itself is constructed based on the minimum increase in the error sum of squares. The dissimilarity within each group is measured by the inertia inside the group, defined as:

$$I_R = \frac{1}{n_R}\sum_{i=1}^{n_R} d^2(x_i, \bar{x}_R) \qquad (4)$$

Where x_R is the center of gravity (mean) over the groups. I_R clearly provides a scalar measure of the dispersion of the group around its center of gravity. When two objects or groups (for instance, P and Q) are joined, the new group (P + Q) will have a larger inertia $I_{(P+Q)}$. It can be shown that the corresponding increase of inertia is given by:

$$\Delta(P,Q) = \frac{n_P n_Q}{n_P + n_Q} d^2(P,Q) \qquad (5)$$

In this, the Ward's method is defined as an algorithm that joins the groups that give the smallest increase in $\Delta(P,Q)$. The process is continued until all objects are joined.

Timn (2002) argues that the scale of measurement of the variables is an important consideration when using the squared Euclidean distance. Thus, changing the scale can affect the relative distances among the objects. In order to eliminate the dependence of the analysis on the units of measurement, we standardize each variable in the usual way by subtracting the mean and dividing by the standard deviation of the variable.

Finally, since we wish to determine the optimal number of clusters that provides the best fit to the data, our approach is to look for the largest changes in the distances at which clusters are formed. A formalization of this procedure is proposed by Rencher (2002) who suggests choosing the number of clusters given by the first stage in the dendrogram at which:

$$\alpha_j > \mu_\alpha + ks_\alpha \qquad j = 1, 2, \ldots, n, \qquad (6)$$

Where $\alpha_1, \alpha_2, \ldots, \alpha_n$ are the distance values for stages with n, n-1, . . . ,1 clusters, μ_α and s_α are the mean and standard deviation of the α's, and k is a constant.

EMPIRICAL RESULTS

Table 1 shows a summary of the main statistics derived from the estimation regression model when it is performed separately against disaggregated data for the overall welfare industry and for each single industry. The estimated parameters show a general relationship between public (PUB) and non-profit (NPS) providers of welfare services that appear basically positive. Nevertheless, only in the industry of the social services, it is statistically significant at 5% level. The sign of the regression coefficients on the government subsidies (GOV) philanthropy (PHI) and own income (OWN) are mostly positive even if not statistically significant for several specifications.

Table 1. The overall welfare sector and the single industries estimations

	OVERALL		EDUCATION		HEALTH		SOCIAL SERVICES	
Regressors	NPS	NPS	NPS	NPS	NPS	NPS	NPS	NPS
α	-4.786	-18.33	-2.334	-9.062	-4.437	-20.802	-6.42**	-29.84**
	(0.338)	(0.106)	(0.392)	(0.274)	(0.256)	(0.185)	(0.027)	(0.015)
PUB	1.579	0.889	1.123	2.174	1.897	-1.144	1.991**	1.420
	(0.293)	(0.488)	(0.491)	(0.174)	(0.387)	(0.702)	(0.049)	(0.110)
OWN		0.143		-0.104		0.190		0.918
		(0.870)		(0.836)		(0.809)		(0.302)
GOV		3.205*		1.443		4.277*		3.923**
		(0.066)		(0.215)		(0.065)		(0.032)
PHI		1.005		-0.014		1,472		2.259
		(0.405)		(0.983)		(0.456)		(0.125)
R^2	0.073	0.592	0.032	0.412	0.050	0.509	0.234	0.646
F-sig	0.293	0.021	0.491	0.143	0.387	0.057	0.049	0.010

Dependent variable: NPS in single and multiple regression models
In parentheses t values
*10% significant, ** 5% significant, *** 1% significant
Source: Raguseo and Kuvikova, 2008

Table 2 presents the results from the estimation of the pooled model simultaneously performed for the three welfare industries with and without fixed effects.

The coefficients on public sector size (PUB) it is statistically significant at 5% level only when a fixed effect estimator is applied, which suggests that internal industry characteristics strongly influence the significance of the relationship between the non-profit and the public welfare sector in Europe. It is quite reasonable to think that unobservable variability across welfare industries also appears as an important factor influencing the way these sectors are mutually interdependent (Nemec, 2008). In the polled model, the coefficients on private donations (PHI) and own

income (OWN) are not statistically significant. The coefficient on government subsidies (GOV) is the only to be statistically significant at 1% level in both models.

From the results so far, there is not evidence on the existence of a common model for dealing with the provision of welfare services among European countries. The interdependence theory is a quite solid theoretical framework for explaining the relationship between non-profit and public providers of welfare services in Europe. At the same time, the analysis does not deny the robustness of the heterogeneity and the trust theory, which predict a positive impact of the philanthropic giving and commercial income on the size and development of the non-profit sector. In fact, for the European countries, it seems to exist a significant supplementarity between these non-profit sector's economic theories (Raguseo and Vlcek, 2008). Moreover, the non-profit sector cannot be simply interpreted as the outcome of a linear regression equation on more explanatory variables. Rather, other more complex social, political, cultural and historic forces may play an important role.

Table 2. The pooled estimations

Regressors	Pooled Model without fixed effects		Pooled Model with fixed effects	
α	-1.197*	-9.106*	-4.448**	-11.653**
	(0.094)	(0.073)	(0.015)	(0.014)
PUB	0.192	0.367	1.758**	1.684**
	(0.559)	(0.233)	(0.042)	(0.020)
OWN		-0.060		-0.158
		(0.850)		(0.584)
GOV		1.953**		1.957***
		(0.014)		(0.008)
PHI		0.134		0.164
		(0.804)		(0.741)
EDU_α			1.062	1.099
HEA_α			0.254	-0.020
SOC_α			-1.316	-1.079
R^2	0.007	0.333	0.120	0.474
F-sig	0.559	0.001	0.106	0.000

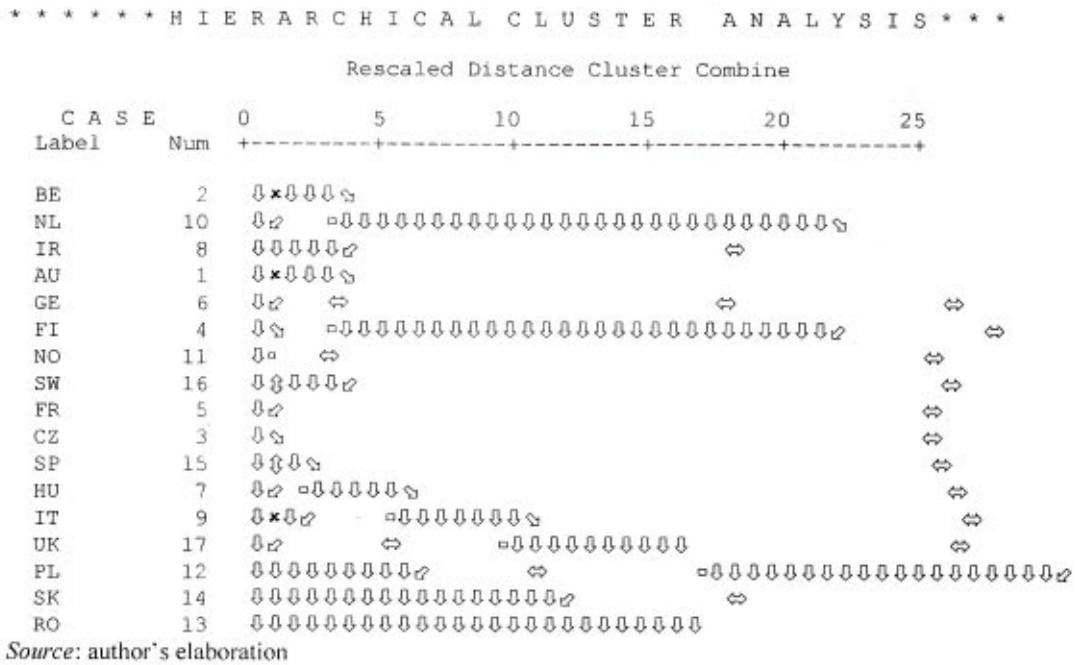
Dependent variable: NPS in pooled models without and with fixed effects
In parentheses t values
* 10% significant, ** 5% significant, *** 1% significant
Source: Raguseo and Kuvikova (2008)

In order to check the validity of the previous results, it is feasible to verify as predicted by the social origin theory whether there are no groups of counties with different welfare models in our sample. Since, the non-profit sector goes well beyond the linear relation that we have drawn so far, we employ a cluster analysis technique for preliminarily detecting similarity and dissimilarity in the way European countries deal with the provision of welfare services. This will help to better identify the existence of potential relationships between public and non-profit welfare sectors among European countries. As pointed out in the previous section, our cluster technique employs the Ward's method with the squared Euclidean distance as distance function. The values are transformed into z-score in order to make the selected variables comparable among them. Needless to say, the variables used in the cluster analysis are the same employed in the regression analysis. The dendogram in **Figure 1** shows the existence of three optimal clusters on the highest interpretable measure of dissimilarity among European countries. The first cluster is composed by the Nordic countries along with France, Austria and Germany. Then we can identify a small group of countries represented by Belgium, the Netherlands and Ireland. The third sub-group is composed by the Central-Eastern European countries plus Spain, Italy and United Kingdom.

Even if the resulting clusters are far from being absolutely distinct, this classification offers a helpful tool to distinguish a variety of regimes of non-profit/public welfare behavior and to combine the relevant non-profit's economic theories into an explanation of the size and development of the non-profit sector in

Europe. As showed in **Table 3**, three different clusters or patterns of relationship between public and non-profit providers of welfare services are evident in Europe. The following classification reviews some of the main features of the non-profit sector in these subgroups of countries and emphasizes some of the key factors that may help to explain the relationship between public and non-profit providers of welfare services in Europe.

Figure 1. Dendrogram using the Ward's Method



Source: author's elaboration

Table 3. Cluster membership

Case	3 Clusters
1: AU	1
2: BE	2
3: CZ	3
4: FI	1
5: FR	1
6: GE	1
7: HU	3
8: IR	2
9: IT	3
10: NL	2
11: NO	1
12: PL	3
13: RO	3
14: SK	3
15: SP	3
16: SW	1
17: UK	3

Source: author's elaboration

The first cluster represented in our data by the cases of the Nordic countries with France, Germany and Austria is characterized by a relatively large public welfare sector and relatively small non-profit welfare sectors, at least as measured in terms of expenditure. This model, in the literature has also been defined as the social democratic regime by Esping-Andersen (1990). In the social democratic regime, nevertheless, a small non-profit welfare sector does not necessarily mean a small non-profit sector as a whole. This is certainly the case in Sweden and Norway where a very substantial network of volunteer-based non-profit organizations engaged mostly in expressive rather than welfare service functions turns out to exist alongside a highly developed public welfare state. Because of the volunteer workforce also the revenue structure of the Nordic third sector differs considerably from the rest of all the other European countries. Philanthropy (most of it in contributions of time) plays a very important role in supporting the fiscal structure of the non-profit sector in these countries.

The second cluster is represented in our data by Belgium, the Netherlands, and Ireland. In these countries, the state has either been forced or induced to make common cause with non-profit organizations, albeit for different historical reasons. Such a model, also well known as corporatist regime, stresses the concept of coexistence between an extensive government welfare expenditure and a sizeable non-profit welfare sector. In this Western European model the non-profit welfare sector, is generally quite large. Anyway, the largest part of the workforce is paid. The ability of the non-profit welfare sector to support this workforce is due to the substantial levels of public sector support available to it. In these countries, the highest share of the non-profit sector revenue comes from the public sector, well above the European average. Most of the non-profit organizations in these countries are engaged in service functions, particularly welfare services such as education, social services, and health. These features reflect the distinctive way in which the welfare state evolved in the continental European countries. The result has been a model of extensive partnership between the state and the third sector. This can be thought as a distinctive Western European-style of welfare partnership pattern characterized by a large non-profit sector composed mostly by paid employees, heavily engaged in welfare service provision, and extensively financed through government subsidies.

Finally, the Central and Eastern European (CEE) cluster represents an interesting mix of the previous two. The implementation of the communist regime after the World War II resulted in a substantial increase in the welfare services directly provided by the state. At the same time, the governments of these countries supported only few private organizations that were instrumental to their official policies, while suppressing those that might challenge the government's hegemony. In relatively recent time, also governments in the CEE countries have allowed the non-profit organizations to provide public welfare services. The right conditions for the development of the non-profit sector in CEE were built only after the breakdown of the communist regime. Our analysis shows the Central and Eastern European countries to occupy a borderline between the corporatist and social-democratic regimes. Indeed, for the CEE countries a high share of non-profit organizations perform mostly expressive functions as in the social-democratic regime and the workforce employed is generally paid as in the corporatist regime. This is likely a consequence of the social welfare policies of the Soviet-era , which relied on direct provision of the most important welfare services by the state and tolerated, only a limited private non-profit sector but largely for recreational, and professional purposes (Kuvíkova, 2004; Kaírkova, 2006).

One particular feature of the non-profit sector in Central and Eastern Europe is the relatively high level of reliance on membership fees and services charges on the part of the non-profit organizations. Paradoxically, despite its socialist past, the commercial income constitutes a larger share of the revenues of the non-profit sector in these countries than in any other European countries. One explanation for this may be that when state enterprises were transformed into private firms, they turn off into non-profit organizations and continued to provide many of the health and social services that they previously provided to their workers. At the same time, also their workers continued some degree of financial support to those activities and this support shows up in our data as own income.

From the analysis so far, what seems clear is that not only the set of theories we are analyzing helps to explain the differences in the non-profit welfare sector and the apparent anomalies in the relationship between the public and the non-profit welfare sector across European states, but also this theoretical framework helps us account for the patterns of the non-profit finance.

CONCLUSION

The nature of our results suggests that among European countries do exist differences in the relative

size of their non-profit and public welfare sectors. Also within each sector, estimates across industries differ due to unobserved variability. However, between countries with the same structure of the welfare industries there are not significant differences in the way they deal with the provision of welfare services. The regression analysis found fundamentally positive signs of the coefficients on public sector (PUB), government subsidies (GOV) and philanthropy (PHI), confirming that it seems quite hard to support the robustness of a specific theory over another. The main research findings showed that there are important elements of potential cooperation and partnership between the public and non-profit sectors in the provision of welfare services. At the same time, we did not completely reject a positive effect of the private philanthropic giving and fees on the size of the European non-profit welfare sector. The evidence provided by this analysis does not fully support the existence of a common and unique European model of welfare services provision among the sample countries. Rather, three different models or patterns of relationship between the non-profit and public welfare sectors are evident in Europe. Although, the resulting countries sub-groups are far from being completely specific, this classification fits well to the existing non-profit sector theories we have taken into examination, and in turn, it highlights some of the key elements that may influence the relationship between the public and non-profit providers of welfare services in Europe.

We must warn the reader that this analysis is not deprived of the possibility of errors. Nevertheless, we hope that it will provide a useful support and incentive toward a more sophisticated test of the existing economic theories of the non-profit sector. This would help to understand what the true determinants of the size and scope of this sector really are. And, due to the increasing importance of this topic, this would represent a really valuable result.

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