

Mind the Gap! Social Capital, East and West[∇]

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December 2007

Abstract

Recent Eurobarometer survey data are used to document and explain the stock of social capital in 28 European countries. Social capital in Central and Eastern Europe – measured by civic participation and access to social networks – lags behind that in Western European countries. Using regression analysis of determinants of individual stock of social capital, we find that this gap persists when we account for individual characteristics and endowments of respondents but disappears completely after we include aggregate measures of economic development and quality of institutions. Informal institutions such as prevalence of corruption in post-communist countries appear particularly important. With the enlargement of the European Union, the gap in social capital should gradually disappear as the new member states catch up (economically and institutionally) with the old ones.

Keywords: social capital, institutions, capitalism, transition

JEL codes: Z13, P36, O57, O17

[∇] This research was initiated while Jan Fidrmuc was visiting AIAS whose hospitality he gratefully acknowledges. We are indebted to Robert Manchin of The Gallup Organisation Europe for giving us access to the Candidate Countries' Eurobarometer survey data. We are grateful to Victor Ginsburgh, Arthur Schram and Jelle Visser, seminar participants at AIAS, ECARES, ZEI, CEU and the 2004 European Public Choice Conference in Berlin as well as two anonymous referees and Daniel Berkowitz as the editor for many helpful comments and suggestions.

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1 Introduction

Over the last decade, the interest in studying social capital has grown enormously among sociologists, political scientists and economists alike. While social capital is hardly a new concept, it has been greatly popularized by the seminal work of Robert Putnam (1993). In his twenty-year long research on the quality of local governments in Italy, Putnam identified differences in *civic participation* (which he proxied, most notably, by membership in voluntary organizations) as the source of vast disparities in institutional quality and in turn of economic performance between the North and South of Italy. A plethora of research has followed, and social capital (which, as a general term, encompasses Putnam's civic participation) was found to have important real-life repercussions, in particular in economic, social and political development of societies. Macroeconomic studies (Knack and Keefer, 1997; Whiteley, 2000 and Beugelsdijk and van Schaik, 2005) have found that, in cross-country perspective, higher density of trust and/or active membership in organizations is associated with higher growth. Offering an historical perspective on the issue, Greif (1994) argues that cultural underpinnings of social interactions in medieval societies played a crucial role in reducing free riding and opportunistic behavior. These empirical findings cement Coleman's (1988) assertion that social capital, just like other forms of capital, is productive and facilitates the attainment of goals that otherwise would not be possible. Accordingly, high stock of social capital increases individuals' ability and willingness to cooperate, improves monitoring and enforcement of contracts, and reduces free-riding and information asymmetry. Social capital therefore lowers transaction costs, fosters innovation and dissemination of technology and thus leads to better economic outcomes.

Despite the increasing recognition of the importance of social capital for economic outcomes, our understanding of factors that determine the stock of social capital – at the individual or aggregate levels – is still very limited. This is a major shortcoming (see Glaeser, 2001), because “the dearth of research on determinants of social capital has held back its use as a policy tool in economic and social development” (Rupasingha et al., 2006: 84). The previous literature is concerned largely with *measuring* the stock of social capital (usually at the aggregate, national level) and its change over time, and with investigating its impact on a particular variable of interest (typically economic and/or institutional development of countries). Little attention is

given to analyzing the factors that *determine* the individual stock of social capital and/or to explaining the sources of cross-sectional differences across countries.¹

This paper therefore constitutes one of the few attempts to bridge the gap between theory and empirics. Its contribution is three fold. First, we introduce a new and previously unavailable comparative dataset, based on multiple Eurobarometer surveys featuring a number of alternative measures of social capital for a sample of 28 European countries: including the old member countries of the European Union and the new member countries.

Second, we take the analysis of the determinants of the individual stock of social capital to another level by considering individual and aggregate (country specific) factors alike. By using large multi-country data sets of individual respondents, our study permits the simultaneous identification of individual-level and societal-level determinants of social capital.

Finally, by focusing on social capital in the enlarged EU, we aim to shed light on the existing gap in the stock of social capital between the developed Western countries and the formerly communist countries of Central and Eastern Europe. In particular, we investigate whether and why cross-sectional differences in social capital exist in Europe. In doing so, our analysis seeks to determine whether the East-West gap in social capital is due to different individual endowments (e.g., education levels or occupational structure) or country-specific economic and institutional characteristics. As the data we are using were collected for the European Commission, our analysis is necessarily constrained to include only the old and the new member countries of the EU. Though there has been some research studying social capital in post-communist countries² separately (see Paldam and Svendsen, 2000; Adam et al., 2004), to the best of our knowledge, we are the first to systematically develop and jointly analyze the formation of social capital in both developed and transition

¹ Furthermore, that work is largely theoretical in its nature (see Alesina and La Ferrara, 2000; Glaeser et al., 2002). Empirical attempts, on the other hand, are fairly recent and tend to focus primarily on social capital in one country (see Glaeser et al., 2002 for evidence in the United States and Groot et al., 2007 for evidence in the Netherlands). For a recent extensive overview of social capital literature, see Durlauf and Fafchamps (2004).

² With the exception of Cyprus, Malta and Turkey, all new member countries are former communist countries. This shared legacy of communism and central planning is one of their main distinguishing features in comparison to the old member countries of the EU. Therefore, the on-going post-communist transition process is an important aspect of our analysis.

countries.³ We construct measures of social capital applicable to both groups of countries and analyze them in a unified framework. We then discuss our findings specifically in the context of the enlargement process.

In the previous literature on enlargement or, more generally, on the process of transition from communism to democracy and market economy, the focus has been on real and nominal convergence and convergence in formal institutions (i.e., laws and regulations). Informal institutions (i.e., social norms and rules of behavior) have not received much attention. In this paper, we draw guidance from recent developments in the new institutional economics. That literature stresses the importance of informal institutions and their role in explaining differences across developed and less developed (both developing and transition) countries (see North, 1990; Feige, 1997). Given that the formerly communist countries are still going through transformation involving tremendous institutional restructuring, it is very important that informal institutions develop in parallel to formal institutions, so that the two remain compatible. If this happens, the transaction costs of such institutional restructuring, expressed in the form of predatory activities such as corruption and tax evasion, will decrease (see Pejovich, 2003). On the other hand, if formal and informal institutions are in conflict with each other, more of such predatory activities may be expected, as shown empirically by Gërxhani (2004).

Our analysis confirms the existence of a gap in social capital between Western and Eastern European countries. However, rather than being a more-or-less permanent legacy of communism, our findings suggest that this gap reflects the lower level of economic development and the poorer quality of institutions in the latter countries. As such, it should gradually disappear as the post-communist countries catch up with respect to both their economic development and the quality of institutions.

The paper is organized as follows. The next section reviews the previous literature about social capital and its measurement. Section 3 introduces our data and explains the measures that we use. Section 4 presents the conceptual framework. Section 5 provides empirical insights on the individual determinants of social capital. Section 6 completes the analysis by integrating individual and aggregate factors. Section 7 concludes.

³ A more recent contribution exploring only individual-level differences between Western and Eastern European countries, can be found in Kaasa and Parts (2007).

2 Social capital: Definitions and measurement issues

2.1 What is social capital?

As a consequence of the variety of aspects it is thought to embody, social capital has been defined in a variety of ways. Although the concept itself originates from Loury (1977) and later Bourdieu (1986), Coleman's (1988) definition has become especially popular. Coleman, presenting a sociologist's view, defines social capital as a component of human capital that allows members of a given society to trust one another and to cooperate in the formation of new groups and associations. Putnam (1993: 664-665), a political scientist, offers a broader definition of social capital as encompassing "features of social life – networks, norms, and trust – that enable participants to act together more effectively to pursue shared interests". Stiglitz (2000), an economist, sees social capital – which he delineates as encompassing tacit knowledge, networks and reputation – as a social means to tackle moral hazard and incentive issues. Broadly speaking, all these definitions refer to trust, cooperative behavior and networks between groups as essential components of social capital (Knack and Keefer, 1997). In the presence of trust, cooperation is easier and therefore the frequency and density of networks is expected to be higher.⁴ Interaction through networks in turn enhances trust and cooperative ability. According to Dasgupta (1988), social capital can make economic transactions more efficient by expanding the parties' access to information, enabling them to coordinate activities for mutual benefit and reducing opportunistic behavior through repeated transactions. In addition, Putnam (1993) argues that participation in civic associations can contribute to the effectiveness and stability of democratic governments, both because of their 'internal' effects on individual members and because of their 'external' effects on the wider polity. "Internally, associations instill in their members habits of cooperation, solidarity and public-spiritedness. Externally, 'interest articulation' and 'interest aggregation' are enhanced by a dense network of secondary associations" (Putnam, 1993: 89-90). All in all, these studies are fundamentally based on the assumption that

⁴ The direction of causality is not clearly resolved, however. Gambetta (1990), for example, argues that trust follows rather than causes cooperation.

social capital is one of the primary forces, which shape social and economic development.⁵

There is, however, theoretical (see Lipset, 1959; Flanagan, 1987; Inglehart, 1997) and empirical (see Inglehart and Baker, 2000; Paugam and Russell, 2000; O'Connell, 2003; Casey and Christ, 2005) research that either questions the validity of such an assumption or substantiates the opposite direction of causality. In other words, these studies argue that social capital may mediate economic development but not determine it, or that social capital is in fact determined by economic outcomes. Focusing particularly on one aspect of social capital – civic involvement in associations – sociologists and political scientists have found that the higher the GDP per capita, the higher the level of education and as a consequence wealth, and therefore the easier the shift toward the 'post-materialist' values of well-being, tolerance and trust – values which in turn support the development of associations (see Inglehart, 1990; 1997). The relationship between social capital (measured as membership in organizations) and democracy has also been researched. Discussions (mainly theoretical) on this relationship are also split around the issue of causality. In a fairly recent empirical study, however, Paxton (2002) finds that the relationship between social capital and democracy is reciprocal so that they simultaneously affect each other.

Obviously, whether social capital affects social, political and economic development or the other way around or whether the relationship is simultaneous remains a controversial issue. Because of the popularity of the concept emerging from the focus on the effect of social capital on societal development, in spite of some studies (as mentioned above) the reverse effect is under-researched. In order to better understand the development of nations, more research is needed on the determinants of social capital. Agreeing with social psychologists, Greif (1994) argues that the level of development and the organization of an economy may determine whether societies develop 'collectivist' or 'individualist' characteristics. The former tend to build up group-specific social capital (i.e., pertaining to one's family, religious or ethnic group) and rely on informal enforcement, whereas the latter are based on

⁵ Nevertheless, it is now widely recognized that social capital may also have less desirable consequences. For an extensive discussion, see Portes (1998).

interactions across groups that facilitate the accumulation of generalized social capital and make use of formal enforcement rules.⁶

At a first instant, an analogy can be observed between Greif's categorization of societies and the two groups of countries analyzed in this paper. Most of the old member states of the EU are generally characterized by a high density of economic transactions among groups, well-established institutions, high level of generalized trust, high participation in civil associations and a bottom-up structure of economic transactions. Correspondingly, they would seem to fall into the category of individualist societies. New member countries, on the other hand, feature relatively large underground economy, greater extent of corruption and state failure, low levels of generalized trust and participation in civil associations and a top-down structure of economic transactions. Hence, they come close to Greif's description of collectivist societies. Moreover, with the exception of Cyprus and Malta as well as Turkey (which is a candidate for EU membership), the new member countries share the legacy of communism.

Research on social capital in these countries has put forward a so-called dictatorship theory of missing social capital (see Raiser, 1999; Kunioka and Woller, 1999; and Paldam and Svendsen, 2000, 2001). According to this theory, dictatorships destroy social capital, group-specific and generalized alike. Furthermore, they create conditions whereby, when dictatorships collapse, societies may even accumulate 'negative' social capital, which in turn impedes economic growth. During the transition period in most of the new member countries, 'positive' social capital has seemingly dissipated and 'negative' social capital, taking the form of underground activities, corruption and organized crime, has become more prominent.

The gap created by the destruction of old institutions and the introduction of new ones provides a favorable environment for the persistence or even further accumulation of 'negative' social capital during transition.⁷ The dictatorship theory of destroyed social capital thus adds a new dimension to Greif's categorization. Within

⁶ Svendsen and Svendsen (2004) use notions of 'bonding' and 'bridging' social capital, respectively, to describe what we call group-specific and generalized social capital. The 'bridging' social capital is the beneficial one because it captures "open networks that are outward looking and encompass people across diverse social cleavages." (p. 2)

⁷ The extent to which this 'negative' social capital (i.e., underground activities or corruption) has emerged varies per country. Rose (2000) relates it to the supremacy of the totalitarian regime these countries experienced during communism. The same line of argument can be found in Putnam et al. (1993), where the low level of social capital in South Italy is attributed to the long absolutist regime of the Kingdom of Sicily.

the so-called collectivist societies, there are countries which due to the legacy of communism may possess neither generalized nor group-specific social capital and may even have an inherited stock of ‘negative’ social capital.⁸

These characteristics of post-communist countries provide another evidence of the causation running from democracy to social capital. “Given the totalitarian tendencies of state socialist systems, an autonomous civil society rarely emerges in a bottom-up fashion, except when the regime is in serious crisis. Instead, its emergence is often the result of top-down efforts, that is through tolerance, encouragement, or sponsorship by state policies” (Tong, 1994: 334).

2.2 Measurement of social capital

The literature tends to attach the label *social capital* quite liberally to a number of concepts that are not necessarily equivalent to each other, causing definitional ambiguity (Portes, 1998). According to Durlauf (2002), the literature provides a mixture of ‘functional and causal conceptions of social capital’. The former refer to social capital as being functional in facilitating cooperation and efficiency while the latter refer to social capital as a social asset that causes individual cooperative behavior. Durlauf emphasizes the importance of causal definitions of social capital for successful empirical analysis.⁹

The following are the most popular empirical measures of generalized social capital:

- 1 Civic participation, typically captured by membership in voluntary organizations, was pioneered by Putnam’s (1993) seminal work on Italian regions. Through membership in voluntary organizations, one learns to interact with other people – both acquaintances and strangers – in a cooperative manner and to solicit their cooperation to achieve a shared objective.¹⁰ As such, voluntary organizations introduce their members to advantages and

⁸ Leitzel (1997), however, provides an interesting insight on this issue by highlighting some positive effects of ‘negative’ social capital. He argues that collective breaking of ‘bad’ rules such as excessive regulation of the emerging private sector may in fact have positive consequences as it eventually forces the authorities to abandon such bad rules and replace them with better ones.

⁹ For a broader review of empirical analysis of social capital, see Durlauf (2002).

¹⁰ For instance, participating in team sports or playing an instrument in an orchestra requires an extraordinary degree of cooperation, coordination and discipline. The fans of *The Simpsons* television series may recall Lisa Simpson’s unsuccessful attempt at individualism when playing the saxophone in a school orchestra, which illustrates this point rather well.

practice of collective action (Olson, 1982). Later work further distinguishes between Putnamesque and Olsonian organizations (see Knack and Keefer, 1997). The former, such as educational, sport and art clubs, religious and charitable organizations and youth groups, allow their members to build up social capital and pursue common goals without imposing negative externalities on the rest of the society. The latter, including political parties and movements, trade unions, professional associations, and various interest groups, tend to engage in collective action that may reconfigure redistribution systems in their favor at the expense of the rest of the society. Therefore, in contrast to Putnamesque groups, which are thought to play a positive role in the society, the impact of Olsonian groups may be distinctly negative.

- 2 Trust, popularized by Fukuyama (1995), has become the most commonly used empirical measure of social capital. Its empirical popularity is largely due to the availability of extensive cross-country survey data on *generalized trust* (such as those collected within the framework of the World Value Surveys program). Typically, trust is defined as the extent to which people find strangers trustworthy.
- 3 Density of networks is a measure of ties between individuals. Network-based ties can be formal or informal. In formal networks, ties between individuals take the form of joint presence at a formal event or membership in an organization. Alumni associations are an example of formal networks which may partially overlap with membership in voluntary organizations. Informal networks, on the other hand, embody informal relations among friends, members of (extended) family, colleagues and the like. As argued in Paxton (1999), while informal networks are primarily based on ties between individuals, formal networks go beyond that by accessing and creating additional group-level benefits.
- 4 Philanthropic generosity (i.e., altruism). This measure is based on Putnam's (2001) finding that the frequency of charitable contributions in the US over time has been highly correlated with membership in voluntary organizations. This measure is problematic, however, because individual-level altruism may depend on the generosity of the welfare state. In a society with a high degree of

redistribution, one may therefore observe less philanthropic generosity, without this necessarily implying a lower level of social capital.¹¹

Following up on Durlauf's (2002) emphasis on the importance of causal definitions of social capital and on Portes's (1998) discussion on definitional ambiguity, this paper employs Bourdieu's definition of social capital: "as the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition" (Bourdieu, 1986: 248). Despite its lack of popularity, this definition is "arguably the most theoretically refined" (Portes, 1998: 3) for two reasons. First, because of its focus on the social relationship itself and second, because it emphasizes the benefits associated with participation in such a relationship. "The consensus is growing in the literature that social capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Portes, 1998: 6).

The following section provides a description of the data and methodology used, and explains how social capital is operationalized in this paper.

3 Social capital in Europe

Our measures of social capital are constructed using several recent Eurobarometer surveys commissioned by the European Commission and carried out by Gallup Europe.¹² As our analysis pertains to the period before the latest EU enlargements, we use both the standard Eurobarometer surveys (henceforth EB) carried out in the 15 countries that were members of the European Union at the time¹³ and the so-called Candidate Countries Eurobarometers (henceforth CCEB) carried out in the new member countries¹⁴ since 2000. The two types of surveys were implemented using essentially the same methodology and frequently contained similar or identical questions.¹⁵ Importantly, the EB surveys featured questions that address various

¹¹ We are grateful to a referee for pointing out this drawback of this measure.

¹² We are grateful to Robert Manchin of The Gallup Organisation Europe for kindly making these data available to us.

¹³ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Ireland, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

¹⁴ Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, and Turkey. All of these countries, except Turkey, have since become members of the EU.

¹⁵ The surveys in question are EB 50.1 (1998), 52.1 (1999) and 56.1 (2001) as well as CCEB 2001.1. The surveys are carried out by means of face-to-face interviews, with approximately 1,000 respondents

aspects of social capital and identical questions were included in the April 2002 CCEB survey. We can therefore carry out comparative analysis with both sets of countries. The EB/CCEB questions of interest gauge three aspects of social capital: civic participation, access to social networks and altruism (philanthropic generosity). These three components capture both quantitative and qualitative dimensions of social capital, since the first and, to some extent, the second aspect indicate objective associations or ties between individuals, while the last together with parts of the second reflect the subjectivity within a tie.¹⁶ Table 1 presents the aggregate figures.

TABLE 1 HERE

The first measure in Table 1 is the average civic participation, quantified as active membership in voluntary organizations. Specifically, the respondents were asked: “*From the following list, could you tell me in which of these organizations do you actively participate?*”. The list of organizations included charities (social, communal or religious); religious or parish organizations other than charities; cultural or artistic organizations; trade unions or political parties; human rights movements or organizations; organizations for the protection of nature, animals and the environment; youth organizations such as scouts or youth clubs; consumer organizations; sports clubs and associations; hobby clubs; and other clubs or organizations. It should be stressed that the question asks the respondents to list those organizations in which they *actively* participate. We believe that active participation is crucial for the link between membership in voluntary organizations and social capital: one builds up social capital through interacting with fellow members and participating in common activities, not by paying membership dues or holding a membership card.¹⁷ Unfortunately, the question only records each *type* of organization, thereby

per country, except for Germany (1,000 respondents in each West and East Germany), United Kingdom (additional 300 respondents in Northern Ireland), Poland and Turkey (2,000 respondents each), and Cyprus, Luxembourg and Malta (500 respondents each). The overall sample size thus is approximately 16,000 for the EB surveys and 14,000 for the CCEB. The same questionnaire is used in all countries of the respective group (EB or CCEB), the questionnaire is translated and interviewers are local staff. The surveys are constructed so as to be broadly representative at the national level. The data report East Germany and Northern Ireland as separate entities, and we maintain this distinction. See WZB (2003) for more details.

¹⁶ For a detailed discussion, see Paxton (1999).

¹⁷ An implication of this formulation is that being a member of a religion and attending religious services is not regarded as social capital, unless one *actively* participates in religious or parish organizations. Applying a more liberal concept would result in artificially high levels of social capital

disregarding multiple memberships in similar organizations (for example, one may be a member of two or three different sports clubs). As the survey asked about membership in 11 types of organizations (including an ‘other’ category), the maximum value that this variable can attain is 11. To be consistent with the literature (see section 2.2), we split the membership count into Putnamesque and Olsonian groups in the adjacent columns. No question on trust was included in the Eurobarometer surveys. For comparative purposes, the last two columns of the first part of Table 1 report country averages of level of generalized trust as measured by the two most recent rounds of the World Value Surveys: 1990 and 1996. Specifically, the figures measure the fraction of respondents who declared that most people could be trusted when asked: “*Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?*”. Though this is not a measure used in this paper,¹⁸ the correlation analysis reported below suggests that civic participation and generalized trust are highly correlated, at least in the sample of countries covered by our analysis.

The first three columns of the second part of Table 1 measure the presence of social networks that one can rely on if in need. Specifically, respondents were asked: “*If you had any of the following problems (you were feeling depressed; you needed help finding a job for yourself or a member of your family; or you needed to borrow money to pay an urgent bill, like electricity, gas, rent or mortgage) is there anyone you could rely on to help you, from outside your own household?*”. As each of these three networks is different in nature, we codify them as separate binary variables equal to 1 if the individual has access to the network in question and 0 otherwise.

The last two columns of the second part of the table report on the respondents’ altruistic behavior, based on the following two questions: “*Now thinking about poor or socially excluded people, in the last twelve months, have you done the following*

for countries with high identification with a dominant religion (e.g., the Roman-Catholic church in Poland or Italy).

¹⁸ Some argue that generalized trust is not an adequate measure of social capital, because it does not differentiate between trust and trustworthiness (see Bornhorst et al., 2004), and because it is context-dependent. For example, in an ethnically polarized society, a member of the minority group –even if perfectly trustworthy– will often neither be trusted by the majority of population nor him(her)self trust the members of the majority (see Fershtman and Gneezy, 2001). In addition, the same individual would report considerably different generalized trust depending on the wording (or understanding) of the question: he or she would report high trust vis-à-vis members of own group but low trust vis-à-vis members of the majority group. Glaeser et al. (2000) provide a fine combination of experimental and field data to measure both concepts of trust and trustworthiness. For an interesting theoretical study of trustworthiness, as corresponding to a non-incentive based type of social capital, see Francois and Zabojnik (2005).

(given money or goods to poor or socially excluded people; given up some of your time to help poor or socially excluded people) at least once a month, less often or have you not done it?". The answers are coded as 0 for those who never contributed money or given up their time, 1 for those who did so less than once a month and 2 for those who did so more often.

For each measure of social capital, countries are presented in descending order. The average figures for the old EU members and the new member countries are also included. There are clear similarities in the ordering of countries. Whether the various indicators measure the same underlying phenomenon (i.e., social capital) or not can be assessed by means of a simple correlation analysis. Table 2 presents the correlation matrix for the various measures at the aggregate level. Clearly, civic participation is very closely correlated with aggregate generalized trust: the correlation coefficients between trust and average participation as well as membership in Putnamesque and Olsonian groups are all close to 0.8. The correlation analysis further suggests that Putnamesque and Olsonian groups are not necessarily that different from each other: countries with high participation in one category of groups also display high levels of participation in the other. Similarly, both types are closely correlated with generalized trust. Nonetheless, for the sake of completeness, we maintain the distinction between Putnamesque and Olsonian groups in the remainder of our analysis.

TABLE 2 HERE

Countries which display high levels of civic participation tend to also have more extensive social networks, as suggested by correlation coefficients between average participation and networks, around 0.5. Correlation between networks and generalized trust is also similarly high, between 0.3 and 0.6 for the 1996 WVS round. The only indicator that stands out as largely orthogonal to either civic participation or generalized trust is altruism. In contrast to Putnam's (2001) finding, our data suggest that both measures of philanthropic generosity are at best weakly correlated with the remaining variables.

Finally, based on Table 1, two observations can be made about the distribution of social capital across countries. First, of all the indicators listed in Table 1 except giving up one's time to help the poor and socially excluded, all show the old member countries as having on average higher stock of social capital than the new member

countries. Given that the vast majority of the new EU members are post-communist countries, this observation seems to confirm the assertion of Paldam and Svendsen (2000, 2001) and Adam et al. (2004) that communism destroyed social capital by discouraging social interactions outside one's immediate network of friends and family. Second, there is a considerable degree of variation within both groups of countries – some new member countries have very favorable endowments of social capital whereas some old member countries fare rather poorly. A detailed analysis is provided in the following sections.

4 Conceptual framework

As suggested by Bourdieu (1986), we view social capital as a productive asset that is built up through investment: it takes time, effort and often a financial outlay to accumulate social capital. Once built up, as with other types of capital (physical and human), social capital generates a return, depreciates over time and needs to be kept up to prevent it from dissipating and becoming obsolete. An individual's investment in social capital therefore should depend on the individual's socio-economic characteristics, in particular age, family background, level of human capital (education and occupation) and income (see Coleman, 1988). While our approach in this paper is purely empirical, this notion of social capital can be supported by standard economic theory, as is done by Glaeser et al. (2002), whereby the individual's stock of social capital is the outcome of an individual maximization problem with limited resources. Furthermore, in line with our discussion in section 2, we also consider aggregate determinants of social capital such as the level of economic development and quality of institutions. The former (e.g., income level and income equality) may help create more cohesive societies and hence encourage the formation of social capital (Inglehart, 1990; Wilkinson, 1996). The latter (e.g., the rule of law or institutional transparency, and stability and continuity of democracy) are likely to affect the return to investment in any type of capital, including the social one. In more transparent and less corrupt societies, individuals are more willing to engage in civic activities (O'Connell, 2003). According to Paldam (2002), corruption is by far the best available measure of 'negative' social capital. Democracy is also an important factor influencing not only civic engagement but also voluntary membership in associations (Curtis et al., 2001; Schofer and Fourcade-Gourinchas,

2001). In other words, individuals in countries with less transparent and less democratic institutions may be discouraged from investing and, in turn, will acquire less generalized social capital than their counterparts in countries with better institutional environment.

In this paper, we are interested in identifying the determinants of the stock of social capital. Formally, denoting social capital as y_i^* , we would like to estimate the following model:

$$y_i^* = x_i\beta + z_i\delta + \varepsilon_i \quad (1)$$

where x_i is a vector of individual socio-economic characteristics, z_i is a vector of aggregate country-level determinants and ε_i is an unobserved error term.

However, we do not observe social capital directly. Instead, we observe individual membership in voluntary organizations and social networks, which are a manifestation of individual's stock of social capital. As very few individuals participate in more than 3 organizations, we recoded civic participation so that it takes values 0, 1, 2, or 3, with 3 denoting anyone who participates in three or more organizations. The participation in Putnamesque and Olsonian groups was recoded in the same way. Social networks remain defined as above: zero-one dummy variables indicating having access to the respective network. The estimations are therefore performed by ordered logit and binomial logit regressions for civic participation and social networks, respectively. The ordered logit model assumes the following correspondence between social capital and civic participation, denoting the latter as y :

$$\begin{aligned} y &= 0 && \text{if } y^* \leq 0 \\ y &= 1 && \text{if } 0 < y^* \leq \mu_1 \\ y &= 2 && \text{if } \mu_1 < y^* \leq \mu_2 \\ y &= 3 && \text{if } \mu_2 < y^* \end{aligned}$$

where μ_1 , μ_2 and μ_3 are unknown parameters corresponding to thresholds at which individuals increase their civic participation. Assuming the error term has a logistic distribution, the ordered logit model estimates the probabilities of an observation falling within each category as a function of the individual and aggregate characteristics, x_i and z_i respectively.¹⁹ An important advantage of the ordered logit model is that, unlike linear regression, it does not stipulate that, for example, an individual participating in two voluntary organizations has twice as large stock of

¹⁹ See Greene (1997), section 19.8.

social capital as an individual participating in only one organization. The binomial logit, which we use for our analysis of social networks, is a special case of the above with y taking values 0 and 1 only and with only one threshold parameter, μ_1 . For both models, obtaining a positive coefficient estimate implies that the variable in question increases the probability of having a higher stock of social capital.

Endogeneity issues

An empirical concern is that income may be endogenous in social capital. As income is contemporaneous with social capital (unlike education which is typically acquired at a relatively young age), positive correlation may reflect the fact that social capital helps individuals achieve higher earnings. The appropriate approach in this case would be to use suitable instruments for income. Finding good instruments is notoriously hard, however. We would require individual characteristics that can explain income without being correlated with social capital directly. Alternatively, we could identify the relationship between social capital and income if we observed exogenous variation in income that cannot be attributed to changes in social capital. The former approach would be hard given the limited nature of our data set and the fact that we utilize data from four different surveys which did not always include the same questions. The latter approach would be virtually impossible in a single cross-section and would instead require a panel-data analysis. In addition, the objective of our paper is to explain the gap in social capital between new and old member countries of the EU (and, more generally, between less developed and developed countries) rather than to resolve the question of endogeneity of social capital with respect to income. The endogeneity bias, if present, would tend to inflate our coefficients for the impact of income on social capital and therefore the coefficients that we obtain present the upper bound of this effect. Importantly, the coefficients estimated for the other variables remain essentially the same regardless of whether income is included or not.²⁰ Hence, even if the coefficient for income is biased upwards, this should not affect our conclusions on the sources of the East-West gap in social capital.

Importantly, our analysis is not affected by another type of endogeneity that is likely in aggregate-level studies: social capital determining economic outcomes such

²⁰ The results obtained without income can be provided upon request.

as economic growth or the level of economic development (see Durlauf, 2002). This is because our analysis is based on individual data. While economic outcomes are likely to be endogenous in aggregate (country-level) social capital, each individual respondent is too small for her social capital to have an impact on the aggregate economic outcomes.

5 Individual determinants of social capital

As a first step, we relate the individual stock of social capital only to individual socio-demographic characteristics: gender, age, marital status, education, occupation, residency in urban vs. rural areas and income. Formally this implies estimating a reduced form of equation (1):

$$y_i^* = x_i\beta + \varepsilon_i \quad (1')$$

This allows us to ascertain whether the gap in social capital levels between old and new member countries is due to differences in socio-economic and demographic individual-level characteristics (or endowments). For instance, new and old member countries could have different average stocks of social capital because their populations have different distributions of age, education or occupations. However, descriptive statistics summarized in Table 3 suggest that this is unlikely to be the case. Except for having somewhat higher shares of unemployment and retired workers, the new member states are remarkably similar to the old ones. Furthermore, the country that stands out the most is Turkey, which has younger population, larger households, higher share of the population being unemployed, out of labor force or in farming, fewer retirees and fewer people with post-primary education than either the new or old member states. While Turkey is included in the summary statistics in Tables 1-3, we do not include it in our empirical analysis below.²¹

TABLE 3 HERE

²¹ This is done for two reasons. First, due to its unclear status with respect to membership in the EU. Second, because it differs from the other new member countries in many important aspects such as the level of development and cultural and religious traditions. Nonetheless, including Turkey in the regressions or omitting also Cyprus and Malta (which do not share the post-communist legacy characteristic of the other new member countries) produce qualitatively very similar results which are therefore not reported here but can be obtained upon request.

Based on previous research, we should expect social capital to be higher among older people (Putnam, 1995) or to follow a life-cycle pattern (Glaeser et al., 2000); married individuals to have a slightly higher stock of social capital (Putnam, 1995); education to be positively correlated with social capital (Helliwell and Putnam, 1999; Glaeser et al., 2002); entrepreneurship (self-employment) to contribute to a higher stock of social capital (Svendsen and Svendsen, 2004); residency in urban areas to decrease social capital; and income to be positively correlated with investment in social capital (Rupasingha et al., 2006). To account for country-specific factors, we also include country dummies (East Germany and Northern Ireland are reported as separate entities in the EB data sets; we maintain this distinction because of the potentially special nature of these two regions).

The dependent variables are two of the measures introduced in section 3: civic participation and social networks.²² Table 4 reports the regression results obtained with civic participation for the new member countries, while Table 5 presents those for the old member states. Because of the potentially important difference between Putnamesque and Olsonian groups, we analyze determinants of civic participation with overall participation and then also separately for these two types of voluntary organizations. Table 6 reports analogous results of regressions with social networks for the new member states while Table 7 shows the results for the old member states of the European Union.²³

TABLES 4 AND 5 HERE

TABLES 6 AND 7 HERE

Looking first at the overall civic participation, a number of individual characteristics appear to shape individual investment in social capital. Our results generally confirm the findings of previous research. Older individuals display higher

²² Despite the low correlation of altruism with either civic participation or social networks, using the two measures of helping the poor and socially excluded yields results broadly similar to those obtained with civic participation and social networks. This, in addition to the previously discussed issue of altruism as a problematic measure are the main reasons why the results related to altruism are not reported here. They can however be obtained from the authors upon request.

²³ Note that the pseudo r-squared that we report alongside our regression results is the McFadden's r-squared. Limited-dependent variable models such as binomial and ordered logit are non-linear and therefore do not have an equivalent of the r-squared statistic computed for OLS models and their interpretation is somewhat different. While this measure is bound to lie within the [0, 1] interval and increases with the quality of the model, it is typically lower than the r-squared estimated for a comparable linear regression model.

civic participation until approximately 50-60 years of age, whereupon their social capital starts declining with age. Access to social networks, on the other hand, declines with age. Educated individuals and white-collar workers possess higher stock of social capital whereas unemployed, inactive individuals and females have lower stocks. Higher income seems to translate into higher stock of social capital. Finally, urban residents participate in fewer organizations and have poorer access to social networks than rural residents.

When comparing participation in Putnamesque and Olsonian groups, only a few differences emerge. Education and income are positively correlated with active participation in both types of groups. The age profile of social capital over one's lifetime is more pronounced and steeper for Olsonian groups – participation in collective action aimed at distributive objectives increases and subsequently falls more dramatically with age than participation in Putnamesque groups. The unemployed, retirees, house-persons and females, on the other hand, tend to stay away from Olsonian groups but do participate in Putnamesque ones – they pursue their interests and hobbies but not distributional objectives. Married people are less likely to participate in Putnamesque groups but more likely to get organized in Olsonian ones. The self-employed and white-collar workers, finally, tend to participate more often in Putnamesque rather than in Olsonian groups.²⁴

The positive relationship between education and the stock of social capital suggests that social and human capital are complementary – individuals who acquire a high stock of one also invest in the other.²⁵ In addition, education may reduce the cost of investing in social capital by improving one's communication skills, increasing social interaction and networking or by generating positive externalities (Helliwell and Putnam, 1999; Rupasingha et al., 2006). The positive effect of income confirms the existing empirical findings but contradicts the theoretical predictions that investment in social capital should fall with opportunity cost of time embodied in earnings (Glaeser et al., 2002). This finding could be reconciled by recognizing that obtaining social capital may require not only time but also monetary outlays.

Finally, the individual determinants of social capital appear similar in old and new member countries of the EU. Given that, as demonstrated in Table 3, old and new

²⁴ This finding confirms the argument provided by Svendsen and Svendsen (2004: 3), that “entrepreneurship [...] facilitates voluntary collective action and the creation of inclusive types of social capital”.

²⁵ For an early evidence and discussion, see Coleman (1988).

member countries have generally comparable socio-economic structure and that the impact of the various individual characteristics on social capital seems similar, we expect country-specific factors to play an important role in accounting for the East-West gap. This is already insinuated by the high and significant country dummies in tables 4-7. In the next section, we therefore consider aggregate determinants of social capital.

6 Economic development and institutional quality

In this section, we extend the analysis of determinants of social capital by considering, alongside individual characteristics, aggregate factors such as economic development and the quality of institutions (hence, we estimate the full version of equation (1), with the aggregate variables captured by vector z_i). In doing so, we hope to gain additional insights into the factors that underlie the formation of social capital at the individual level and explain the gap in the level of social capital between old and new EU member countries.

As we want to determine whether new member countries of the EU have significantly different social capital levels, we merge the two groups of countries of the EU and include a dummy variable for the new members (while dropping the country dummies). Obtaining a significant coefficient on the ‘new members’ dummy would indicate that there is indeed a gap between the old and the new members that cannot be explained by the variables included in the regression.

At first, we run the regressions only with individual characteristics, thereby merely replicating the above-reported results using the merged data set. These results are reported in Table 8, again for civic participation (overall active participation in voluntary organization as well as participation in Putnamesque and Olsonian groups), and for access to social networks. The impact of individual characteristics mirrors our previous findings: age, education, income, occupation and employment status are all important determinants of the individual stock of social capital (note, however, that in this merged data set the self-employed now display significantly lower civic participation whereas before the self-employed dummy appeared with positive coefficient for the new member countries and insignificant or marginally significant negative coefficient for the old member countries).

The results of the first regression, with overall civic participation, confirm the observation (based on country averages reported in Table 1) that the new members lag significantly behind the old member countries in their stock of social capital: the coefficient on the new members dummy is negative and strongly significant. When distinguishing between Putnamesque and Olsonian groups, an interesting result appears: the new member countries do better than old member countries with respect to participation in Putnamesque groups but do worse for Olsonian groups. The coefficient estimate, however, is much lower (in absolute value) for the former than for the latter. Hence, when the two types of groups are pooled together in ‘overall civic participation’, the lower participation in Olsonian groups more than offsets the effect of higher participation in Putnamesque ones and the new member countries thus appear to lag behind the old member countries. This result is particularly interesting because it cannot be readily discerned from the country averages in Table 1. In that table, new member countries appear with lower participation in both Olsonian and Putnamesque groups; it is only after accounting for individual characteristics that this striking difference becomes apparent.

As we will see later when accounting for institutional factors, the finding that the new member countries lag behind especially with respect to participation in Olsonian groups reflects a general dissatisfaction with, and lack of trust in, formal institutions in the new member countries. This dissatisfaction is particularly strong with respect to groups such as political parties and unions. This has its roots in communism (common to all new member countries except Cyprus and Malta) when political activity was not voluntary, trade unions were highly politicized and subordinated to the communist party and civil society emerged in a bottom-up fashion (Tong, 1994).

The gap in social capital also appears when considering access to social networks: across all three sub-measures, the new members appear to lag significantly behind the old member countries of the EU.

TABLE 8 HERE

To assess the impact of country-level economic and institutional environment, we augmented the regressions with a number of aggregate indicators of economic development and institutional quality: GDP per capita (in purchasing-power-parity terms), the Gini coefficient of income inequality, the Transparency International

corruption-perception index (inverted so that higher values indicate lower corruption), the average of indexes of political freedom and civil liberties reported by the Freedom House (in alternative regression specifications, we replaced this democracy index with a measure of the fraction of years since 1972 that the country was classified by the Freedom House as free or partially free), economic freedom index compiled by the Fraser Institute, and the average economic growth over the preceding three years. Though we tried several alternative regression specifications,²⁶ the results are broadly similar and therefore we report, in Table 9, only one of the most general results, which relate individual stock of social capital to the level of economic development (proxied by per-capita GDP), income inequality, pervasiveness of corruption and economic freedom (alongside the same individual characteristics as before).²⁷

TABLE 9 HERE

The results are striking: once the economic development and institutional quality are controlled for, the new member countries no longer seem to be different from the old members with respect to their stock of social capital. Recall that in the regressions reported in Table 8, the new-member dummy appeared always with a negative and significant coefficient with the exception of participation in Putnamesque groups. Once we control for country-specific characteristics, however, the dummy appears with a positive and significant coefficient in the first three regressions, indicating that the new members display significantly *higher* active participation in voluntary organizations, Putnamesque and Olsonian alike than old members. In the regressions on access to social networks, the dummy is estimated with a negative but insignificant coefficient. These results suggest that new member countries have social capital levels that are no lower than what one should expect given their level of economic development and institutional quality. For civic participation, their social capital may be even higher than what the model would predict.

In fact, already when controlling only for GDP per capita, the new-members dummy appears with a significantly positive coefficient in the regression with Putnamesque groups and is not significant in the remaining regressions, thereby

²⁶ Additional results can be obtained from the authors upon request.

²⁷ Note that we adjusted the standard errors for the fact that aggregate and individual variables are measured at different levels of aggregation.

suggesting that the East-West gap can perhaps be attributed largely to the different levels of economic development attained by old and new member countries.

The impact of country-specific economic and institutional conditions is in line with previous research. Higher per-capita income levels tend to be associated with more frequent civic participation. The relationship is however not very robust and often appears insignificant when additional aggregate indicators are included in the regression (as it is the case in the regressions reported in Table 9). Interestingly enough, individuals in richer countries have poorer access to social networks when in need of money, possibly indicating the more advanced financial systems in those countries (individuals in richer countries are likely to have an easier time to obtain a bank loan and therefore would have less need to rely on their acquaintances in case of hardship). Individuals in countries with high income inequality and especially in those with rampant corruption tend to acquire less social capital. Economic freedom seems to encourage investment into social capital.

These patterns are very intuitive. Income inequality reflects the intensity of social conflict and polarization in a country (see Knack and Keefer, 1997; Rodrik, 1999; Rupasingha et al., 2006). Conflict-stricken and socially polarized countries, not surprisingly, end up with lower accumulation of generalized social capital (and probably other types of capital as well). Rampant corruption and extensive regulation of the economy (the inverse of economic freedom) reduce the returns on any kind of investment, whether it is in social capital or in other productive capacities. Therefore, both formal and informal institutions (economic freedom belonging to the former, while corruption being an expression of the latter) matter for individual acquisition of generalized social capital.

Finally, it is reassuring to note that the individual socio-demographic attributes (education, occupation, unemployment and income) remain strongly significant after controlling for aggregate determinants of social capital. Hence, both individual and aggregate factors play important roles in underlying individual decisions on acquiring social capital.

7 Conclusion

Using recent Eurobarometer surveys, this paper presents new and previously unavailable comparative data featuring a number of alternative measures of social

capital for a sample of 28 European countries: including the old member countries of the European Union, countries that since 2004 have joined the EU as new members (mainly Central and Eastern European countries) and Turkey. Focusing on civic participation and access to social networks as two key (quantitative and qualitative) measures of social capital, we analyze the determinants of individual stock of social capital, considering individual (socio-economic and demographic characteristics) and aggregate (economic development and quality of institutions) factors alike. The results confirm the gap in the stock of social capital between the developed Western countries and the formerly communist countries of Central and Eastern Europe. The existence of such a gap was highlighted by Paldam and Svendsen (2000) and Adam et al. (2004) who attribute it to the legacy of communism.

We find, however, that the gap in social capital between East and West disappears completely once we account for some basic aspects of economic development and quality of institutions in the individual countries. Hence, the fact that the new member states display lower levels of social capital can be attributed to their lower level of economic growth and poorer institutions, and especially more pervasive corruption, rather than potentially long-lasting historical legacy of communism.

Although convergence in formal institutions between the old and the new member states has to a large extent been accomplished (largely as a prerequisite of their accession to the EU), there remains a mismatch between these 'harmonized' formal institutions and the existing informal institutions in the new member countries (see Pejovich, 2003, for a broader discussion). This lack of correspondence, embodied in the prevalence of corruption and other predatory activities, may be the underlying reason for the gap in social capital. This argument can be reinforced by our finding that the participation in Olsonian groups (formal political groups and parties or unions) is much lower than in Putnamesque groups in the new member countries, reflecting the individuals' lack of trust in formal institutions. In this respect, we agree with previous research that argues that social capital (as measured by voluntary participation in organizations) is not merely dependent on individuals' wealth, education or particular interests but also on the cultural and institutional arrangements defined at the national level (Schofer and Fourcade-Gourinchas, 2001).

The enlargement of the European Union is expected to foster institutional development and encourage adoption of growth-enhancing economic policies in the new member countries. This will, in turn, discourage rent-seeking, motivate a

rewarding scheme of leaderships based on performance, enhance public trust in state's actions and promote civic spirit. All this should reduce the return to 'negative' social capital and encourage the formation of 'positive' social capital. Thus, once Central and Eastern European countries catch up with the West in terms of economic development and institutions, they are very likely to close the gap in social capital as well. For this to be possible, however, a gradual harmonization of formal rules and informal norms between the two groups of countries should be of primary importance.

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Table 1: Alternative measures of social capital

| Average Participation | | Olson Groups | | Putnam Groups | | Trust | WVS90 | WVS96 |
|-----------------------|-------------|-------------------|-------------|-------------------|-------------|----------------|--------------|--------------|
| Sweden | 2.00 | Sweden | 1.00 | Netherlands | 1.08 | Sweden | 66.10 | 56.59 |
| Denmark | 1.78 | Denmark | 0.79 | Sweden | 1.00 | Finland | 62.72 | 47.92 |
| Netherlands | 1.70 | Netherlands | 0.62 | Denmark | 0.99 | Denmark | 57.66 | |
| Finland | 1.24 | Finland | 0.44 | N. Ireland | 0.81 | Netherlands | 53.47 | |
| Luxembourg | 1.03 | Luxembourg | 0.34 | Finland | 0.80 | Ireland | 47.37 | |
| | | EU-OM | | | | | | |
| Czech Rep. | 0.94 | Average | 0.28 | Ireland | 0.74 | Great Britain | 43.68 | 29.09 |
| Germany West | 0.93 | Austria | 0.25 | Germany West | 0.73 | N. Ireland | 43.62 | |
| | | EU-OM | | | | EU-OM | | |
| Average | 0.91 | Great Britain | 0.22 | Czech Rep. | 0.73 | Average | 41.16 | 37.74 |
| N. Ireland | 0.90 | Czech Rep. | 0.21 | Luxembourg | 0.69 | Germany West | 37.86 | 39.92 |
| Great Britain | 0.88 | Slovakia | 0.20 | Great Britain | 0.67 | Italy | 35.30 | |
| Austria | 0.88 | Cyprus | 0.20 | Slovakia | 0.66 | Poland | 34.51 | 16.91 |
| Slovakia | 0.86 | Germany West | 0.19 | EU Average | 0.64 | Spain | 34.24 | 28.65 |
| Ireland | 0.84 | Belgium | 0.17 | Austria | 0.63 | Belgium | 33.50 | |
| Belgium | 0.73 | Turkey | 0.15 | Malta | 0.57 | Austria | 31.82 | |
| Cyprus | 0.72 | Slovenia | 0.14 | Slovenia | 0.56 | Lithuania | 30.80 | 21.31 |
| Slovenia | 0.70 | Malta | 0.13 | Belgium | 0.56 | Bulgaria | 30.40 | 23.69 |
| Malta | 0.69 | CC Average | 0.12 | Cyprus | 0.53 | Czech Rep. | 30.25 | |
| France | 0.58 | Germany East | 0.12 | Estonia | 0.48 | Estonia | 27.58 | 21.06 |
| Estonia | 0.57 | France | 0.10 | France | 0.48 | Germany East | 25.60 | 24.28 |
| | | EU-NM | | EU-NM | | | | |
| Average | 0.55 | Hungary | 0.10 | Average | 0.42 | Hungary | 24.59 | |
| | | | | | | EU-NM | | |
| Germany East | 0.54 | Estonia | 0.10 | Germany East | 0.42 | Average | 23.96 | 18.28 |
| Italy | 0.49 | Ireland | 0.10 | Italy | 0.40 | Slovakia | 23.01 | |
| Lithuania | 0.48 | N. Ireland | 0.10 | Lithuania | 0.39 | France | 22.79 | |
| Latvia | 0.47 | Italy | 0.09 | Latvia | 0.38 | Portugal | 21.67 | |
| Turkey | 0.43 | Latvia | 0.09 | Hungary | 0.30 | Latvia | 19.05 | 23.92 |
| Hungary | 0.40 | Lithuania | 0.09 | Spain | 0.29 | Slovenia | 17.39 | 15.54 |
| Poland | 0.35 | Romania | 0.08 | Portugal | 0.29 | Romania | 16.07 | |
| Spain | 0.35 | Poland | 0.07 | Poland | 0.28 | Turkey | 9.98 | 5.50 |
| Portugal | 0.34 | Spain | 0.06 | Turkey | 0.28 | Cyprus | | |

| | | | | | | |
|----------|------|----------|------|----------|------|------------|
| Greece | 0.31 | Greece | 0.05 | Greece | 0.26 | Greece |
| Romania | 0.29 | Portugal | 0.05 | Romania | 0.21 | Luxembourg |
| Bulgaria | 0.18 | Bulgaria | 0.05 | Bulgaria | 0.13 | Malta |

Table 1 (continued)

| Network: Depressed | | Network: Job | | Network: Money | | Altruism: Money | | Altruism: Time | |
|--------------------|-------------|----------------|-------------|----------------|-------------|-------------------|-------------|----------------|-------------|
| Ireland | 0.93 | Ireland | 0.86 | Ireland | 0.91 | N. Ireland | 1.29 | Romania | 0.67 |
| Netherlands | 0.92 | Spain | 0.80 | Spain | 0.91 | Malta | 1.22 | Cyprus | 0.64 |
| Spain | 0.92 | Netherlands | 0.79 | Sweden | 0.90 | Ireland | 1.17 | Luxembourg | 0.56 |
| Sweden | 0.91 | Luxembourg | 0.74 | Netherlands | 0.88 | Netherlands | 1.09 | Finland | 0.55 |
| Denmark | 0.90 | Denmark | 0.74 | Denmark | 0.87 | Romania | 1.08 | Netherlands | 0.54 |
| Slovakia | 0.90 | Austria | 0.74 | N. Ireland | 0.85 | Cyprus | 0.93 | Ireland | 0.51 |
| N. Ireland | 0.89 | N. Ireland | 0.74 | Finland | 0.84 | Luxembourg | 0.93 | Slovenia | 0.50 |
| Great Britain | 0.88 | Portugal | 0.73 | Italy | 0.82 | Great Britain | 0.92 | Turkey | 0.49 |
| France | 0.87 | Great Britain | 0.72 | Czech Rep. | 0.80 | Italy | 0.92 | Austria | 0.49 |
| | | | | EU-OM | | | | | |
| Czech Rep. | 0.86 | Slovenia | 0.72 | Average | 0.80 | Poland | 0.89 | Hungary | 0.43 |
| EU-OM | | | | | | | | | |
| Average | 0.86 | Italy | 0.70 | France | 0.79 | Lithuania | 0.89 | N. Ireland | 0.42 |
| | | EU-OM | | | | | | | |
| Luxembourg | 0.86 | Average | 0.70 | Slovakia | 0.79 | Spain | 0.87 | Poland | 0.40 |
| | | | | | | | | EU-OM | |
| Italy | 0.85 | France | 0.69 | Slovenia | 0.79 | EU Average | 0.84 | Average | 0.40 |
| | | | | | | | | EU-NM | |
| Finland | 0.85 | Czech Rep. | 0.67 | Portugal | 0.79 | Finland | 0.84 | Average | 0.39 |
| Austria | 0.84 | Sweden | 0.66 | Great Britain | 0.79 | Turkey | 0.82 | Italy | 0.39 |
| Malta | 0.84 | Belgium | 0.65 | Luxembourg | 0.78 | Greece | 0.82 | Greece | 0.38 |
| Portugal | 0.84 | Hungary | 0.63 | Estonia | 0.77 | Austria | 0.78 | Malta | 0.38 |
| Poland | 0.83 | Finland | 0.61 | Poland | 0.76 | France | 0.75 | Portugal | 0.37 |
| Belgium | 0.81 | Germany West | 0.61 | Austria | 0.76 | Sweden | 0.74 | Lithuania | 0.35 |
| | | | | | | EU-NM | | | |
| Germany West | 0.80 | Cyprus | 0.59 | Hungary | 0.73 | Average | 0.73 | Latvia | 0.34 |
| Hungary | 0.80 | Greece | 0.56 | Greece | 0.70 | Denmark | 0.72 | Belgium | 0.33 |
| | | | | EU-NM | | | | | |
| Slovenia | 0.78 | Germany East | 0.54 | Average | 0.70 | Slovenia | 0.70 | Spain | 0.33 |
| Germany East | 0.78 | Poland | 0.53 | Lithuania | 0.68 | Portugal | 0.66 | Great Britain | 0.32 |
| EU-NM | | EU-NM | | | | | | | |
| Average | 0.78 | Average | 0.53 | Romania | 0.68 | Belgium | 0.65 | Germany East | 0.32 |
| Estonia | 0.77 | Slovakia | 0.51 | Germany West | 0.68 | Hungary | 0.65 | Denmark | 0.31 |
| Lithuania | 0.77 | Lithuania | 0.50 | Bulgaria | 0.67 | Germany East | 0.60 | Germany West | 0.31 |

| | | | | | | | | | |
|----------|------|----------|------|--------------|------|--------------|------|------------|------|
| Romania | 0.73 | Malta | 0.50 | Belgium | 0.66 | Latvia | 0.59 | France | 0.30 |
| Turkey | 0.71 | Estonia | 0.49 | Cyprus | 0.65 | Germany West | 0.57 | Sweden | 0.30 |
| Latvia | 0.71 | Turkey | 0.48 | Germany East | 0.62 | Slovakia | 0.52 | Slovakia | 0.26 |
| Bulgaria | 0.70 | Romania | 0.45 | Latvia | 0.60 | Czech Rep. | 0.45 | Estonia | 0.22 |
| Cyprus | 0.70 | Latvia | 0.40 | Turkey | 0.58 | Estonia | 0.41 | Czech Rep. | 0.20 |
| Greece | 0.69 | Bulgaria | 0.37 | Malta | 0.56 | Bulgaria | 0.32 | Bulgaria | 0.16 |

Notes:

Average participation is the average number of voluntary organizations in which respondents actively participate. Putnam groups are charities, religious organizations, cultural or artistic organizations, youth organizations, sports clubs and associations, hobby clubs, and other clubs or organizations. Olsonian groups are trade unions or political parties, human rights movements or organizations, organizations for the protection of nature, animals and the environment, and consumer organizations. The maximum possible value is 11 for average participation, 7 for Putnam groups and 4 for Olson groups. Network variables take the value of 1 if the respondents feel she has someone (besides the members of her immediate household) to rely on when feeling depressed, in need of a new job for herself or a family member, or to borrow money urgently, and 0 otherwise. Altruism variables measure whether the respondent contributed money or gave up some of her time during the preceding 12 months to help poor or socially excluded people. It takes values of 0 (never), 1 (less than once a month) and 2 (more than once a month). These variables are based on the following surveys: EB50.1 (1998) for average participation, EB56.1 (2001) for networks, EB52.1 (1999) for altruism, and CCEB 2002.1 for all three types of variables for the new member countries. See the text for further details and the precise wording of the relevant questions. We are grateful to the Gallup Organisation Europe for kindly making these data available to us.

Trust is based on the World Value Surveys rounds of 1990 and 1996-97. The numbers correspond to the fraction of the respondents who declare that most people can be trusted. Blank cell indicates that the country did not participate in that survey round and therefore no data are available.

Table 2: Correlation matrix with alternative measures of social capital

| | Average Participation | Olson Groups | Putnam Groups | Network: Depressed | Network: Job | Network: Money | Altruism: Money | Altruism: Time | Trust (WVS90) |
|--------------------|--------------------------|-----------------|------------------|-----------------------|-----------------|-------------------|--------------------|-------------------|------------------|
| Olson Groups | 0.937 | | | | | | | | |
| Putnam Groups | 0.949 | 0.779 | | | | | | | |
| Network: Depressed | 0.594 | 0.443 | 0.665 | | | | | | |
| Network: Job | 0.451 | 0.297 | 0.543 | 0.753 | | | | | |
| Network: Money | 0.529 | 0.452 | 0.539 | 0.792 | 0.742 | | | | |
| Altruism: Money | 0.145 | 0.039 | 0.228 | 0.295 | 0.373 | 0.167 | | | |
| Altruism: Time | 0.059 | 0.047 | 0.067 | -0.108 | 0.204 | -0.022 | 0.649 | | |
| Trust (WVS90) | 0.804 | 0.748 | 0.767 | 0.653 | 0.463 | 0.671 | 0.309 | 0.014 | |
| Trust (WVS96) | 0.836 | 0.790 | 0.805 | 0.624 | 0.344 | 0.566 | 0.038 | -0.088 | 0.915 |

Table 3: Descriptive Statistics

| | Age | Female | Married cohabita ting | Househ old size | Manual | Self-employ ed | White collar | House Persons | Unempl oyed | Retired | Farmer/ fisherm an | Primary | Seconda ry | Terrtiar y | Student |
|--------------------------|------|--------|-----------------------------|--------------------|--------|-------------------|-----------------|------------------|----------------|---------|--------------------------|---------|---------------|---------------|---------|
| Bulgaria | 46.9 | 54.0% | 68.4% | 2.9 | 24.8% | 3.6% | 12.0% | 3.1% | 21.3% | 34.8% | 0.4% | 27.2% | 43.1% | 19.9% | 9.8% |
| Cyprus | 44.3 | 52.6% | 71.6% | 3.3 | 35.9% | 5.0% | 20.2% | 18.8% | 4.8% | 14.0% | 1.2% | 42.3% | 29.0% | 14.9% | 13.7% |
| Czech Rep. | 43.3 | 55.0% | 55.7% | 2.8 | 29.4% | 7.5% | 29.3% | 2.2% | 4.6% | 26.2% | 0.8% | 12.8% | 54.2% | 19.5% | 13.5% |
| Estonia | 43.1 | 53.5% | 51.1% | 2.7 | 42.8% | 4.1% | 16.4% | 4.0% | 7.9% | 23.9% | 1.0% | 7.1% | 44.5% | 33.4% | 15.0% |
| Hungary | 46.9 | 55.6% | 54.2% | 2.6 | 29.2% | 4.4% | 13.6% | 4.4% | 7.8% | 39.7% | 0.9% | 39.2% | 37.1% | 14.2% | 9.5% |
| Latvia | 42.5 | 53.2% | 55.8% | 3.0 | 32.8% | 4.7% | 21.0% | 4.4% | 12.7% | 23.7% | 0.7% | 7.3% | 43.8% | 36.1% | 12.7% |
| Lithuania | 42.8 | 53.0% | 61.1% | 3.0 | 32.7% | 6.2% | 21.1% | 4.1% | 12.3% | 22.6% | 1.0% | 8.1% | 40.6% | 39.1% | 12.2% |
| Malta | 45.7 | 49.6% | 62.0% | 3.2 | 23.0% | 5.8% | 17.4% | 33.4% | 3.8% | 16.6% | 0.0% | 37.9% | 46.0% | 7.9% | 8.2% |
| Poland | 42.7 | 53.1% | 55.5% | 3.1 | 27.0% | 3.7% | 13.3% | 7.2% | 13.6% | 30.5% | 4.9% | 21.3% | 42.9% | 21.1% | 14.7% |
| Romania | 44.1 | 53.9% | 67.5% | 2.9 | 27.9% | 2.5% | 9.3% | 14.4% | 8.9% | 36.1% | 0.9% | 25.4% | 45.1% | 21.0% | 8.4% |
| Slovakia | 44.2 | 54.9% | 58.0% | 3.0 | 31.1% | 4.7% | 20.0% | 3.3% | 10.3% | 30.1% | 0.6% | 18.8% | 57.5% | 12.2% | 11.5% |
| Slovenia | 44.1 | 54.3% | 57.5% | 3.1 | 33.7% | 4.7% | 19.5% | 3.0% | 7.1% | 30.5% | 1.5% | 21.8% | 37.3% | 23.1% | 17.8% |
| Turkey | 35.1 | 49.0% | 67.2% | 4.4 | 19.7% | 7.9% | 5.4% | 34.3% | 16.9% | 9.0% | 7.1% | 63.0% | 18.7% | 7.6% | 10.8% |
| EU-NM Average | 43.5 | 53.2% | 60.4% | 3.1 | 30.0% | 5.0% | 16.8% | 10.5% | 10.2% | 26.0% | 1.6% | 25.6% | 41.5% | 20.8% | 12.1% |
| Belgium | 44.3 | 50.9% | 57.0% | 2.6 | 32.9% | 9.1% | 15.3% | 11.0% | 9.4% | 22.4% | 0.0% | 18.0% | 44.4% | 27.1% | 10.5% |
| Denmark | 45.8 | 49.2% | 65.3% | 2.4 | 38.4% | 4.7% | 24.1% | 1.4% | 4.5% | 26.0% | 1.0% | 10.0% | 17.4% | 61.0% | 11.6% |
| Germany West | 46.4 | 52.1% | 57.0% | 2.3 | 31.2% | 5.3% | 22.8% | 12.2% | 4.0% | 23.8% | 0.7% | 28.0% | 44.4% | 22.7% | 4.9% |
| Greece | 43.2 | 50.0% | 64.6% | 3.4 | 19.0% | 18.3% | 15.4% | 17.8% | 4.0% | 17.6% | 7.8% | 41.8% | 30.7% | 17.5% | 9.9% |
| Italy | 43.8 | 51.9% | 54.3% | 3.2 | 26.4% | 12.6% | 20.0% | 12.3% | 5.8% | 21.6% | 1.3% | 36.5% | 30.7% | 18.8% | 14.0% |
| Spain | 42.5 | 51.3% | 56.5% | 3.3 | 31.0% | 9.4% | 14.4% | 19.3% | 6.7% | 18.1% | 1.1% | 43.1% | 24.8% | 18.2% | 13.9% |
| France | 42.9 | 49.7% | 61.4% | 2.8 | 32.1% | 6.3% | 24.4% | 10.2% | 7.0% | 19.3% | 0.8% | 16.7% | 45.3% | 28.4% | 9.6% |
| Ireland | 42.0 | 51.5% | 56.2% | 3.5 | 31.8% | 5.7% | 13.4% | 27.4% | 5.3% | 10.4% | 6.0% | 22.5% | 54.0% | 11.4% | 12.1% |
| N. Ireland | 42.8 | 51.2% | 53.1% | 3.2 | 39.1% | 3.1% | 18.3% | 16.1% | 6.2% | 16.1% | 0.9% | 26.4% | 50.9% | 12.4% | 10.2% |
| Luxembo urg | 41.1 | 51.3% | 65.1% | 3.2 | 32.4% | 4.2% | 28.3% | 15.4% | 2.7% | 16.2% | 0.8% | 23.6% | 37.5% | 24.7% | 14.2% |
| Netherlan ds | 43.4 | 55.5% | 64.8% | 2.7 | 28.1% | 4.0% | 24.7% | 22.8% | 4.6% | 15.3% | 0.4% | 16.9% | 43.6% | 29.4% | 10.1% |
| Portugal | 45.1 | 53.6% | 63.0% | 3.1 | 34.2% | 8.6% | 12.3% | 12.6% | 5.2% | 23.9% | 3.3% | 63.1% | 17.3% | 10.8% | 8.8% |
| Great Britain | 44.3 | 53.3% | 63.3% | 2.8 | 33.2% | 5.7% | 15.3% | 14.1% | 7.5% | 23.9% | 0.3% | 32.8% | 50.6% | 11.0% | 5.6% |
| Germany | 47.7 | 54.5% | 62.9% | 2.3 | 32.2% | 5.9% | 13.1% | 2.5% | 16.0% | 29.9% | 0.3% | 23.8% | 51.5% | 20.0% | 4.7% |

| | | | | | | | | | | | | | | | | |
|----------------|------|-------|-------|-----|-------|------|-------|-------|------|-------|------|-------|-------|-------|-------|--|
| East | | | | | | | | | | | | | | | | |
| Finland | 41.7 | 52.7% | 52.6% | 2.3 | 38.9% | 4.8% | 16.1% | 3.8% | 9.2% | 24.9% | 2.3% | 15.9% | 30.3% | 35.0% | 18.8% | |
| Sweden | 45.0 | 47.1% | 62.5% | 2.5 | 35.8% | 6.9% | 31.9% | 0.6% | 3.7% | 20.8% | 0.3% | 17.3% | 26.1% | 42.7% | 13.9% | |
| Austria | 42.2 | 53.8% | 60.4% | 2.6 | 31.2% | 6.4% | 23.7% | 13.0% | 3.6% | 20.0% | 2.2% | 26.2% | 50.1% | 15.8% | 7.9% | |
| EU-OM | | | | | | | | | | | | | | | | |
| Average | 43.8 | 51.8% | 60.0% | 2.8 | 32.2% | 7.1% | 19.6% | 12.5% | 6.2% | 20.6% | 1.7% | 27.2% | 38.2% | 23.9% | 10.6% | |

Notes: Figures correspond to EB 50.1 (1998) and CCEB 2002.

Table 4: Individual determinants of civic participation in new member countries

| | Overall Civic Participation | std. error | Putnam Groups | std. error | Olsonian Groups | std. error |
|------------------------|-----------------------------|------------|---------------|------------|-----------------|------------|
| Female | -0.275*** | (0.049) | -0.258*** | (0.052) | -0.200*** | (0.073) |
| Married | -0.131** | (0.059) | -0.173*** | (0.063) | 0.082 | (0.091) |
| Age | 0.013 | (0.010) | -0.011 | (0.010) | 0.086*** | (0.017) |
| Age squared | -0.0001 | (0.0001) | 0.0001 | (0.0001) | -0.0007*** | (0.0002) |
| Children | -0.022 | (0.025) | -0.022 | (0.027) | -0.038 | (0.039) |
| HH Size | -0.030 | (0.024) | -0.019 | (0.026) | -0.060 | (0.037) |
| Secondary | 0.297*** | (0.081) | 0.286*** | (0.087) | 0.426*** | (0.141) |
| University | 0.763*** | (0.090) | 0.717*** | (0.096) | 0.873*** | (0.149) |
| Student | 1.225*** | (0.139) | 1.355*** | (0.145) | 0.668*** | (0.245) |
| Self-employed | 0.214* | (0.116) | 0.404*** | (0.121) | -0.077 | (0.155) |
| White collar | 0.123* | (0.075) | 0.190** | (0.080) | 0.050 | (0.099) |
| House person | -0.439*** | (0.117) | -0.146 | (0.122) | -1.177*** | (0.229) |
| Unemployed | -0.424*** | (0.114) | -0.296** | (0.123) | -0.613*** | (0.185) |
| Retiree | -0.358*** | (0.095) | 0.018 | (0.100) | -1.050*** | (0.149) |
| Farmer/fisherman | -0.191 | (0.206) | 0.023 | (0.230) | -0.329 | (0.311) |
| UE History: 1 | -0.359*** | (0.083) | -0.303*** | (0.088) | -0.297** | (0.124) |
| UE History: 2+ | -0.258** | (0.107) | -0.137 | (0.111) | -0.446*** | (0.180) |
| HH Income 2nd Quartile | 0.103 | (0.080) | 0.077 | (0.085) | 0.186 | (0.131) |
| HH Income 3rd Quartile | 0.313*** | (0.082) | 0.254*** | (0.087) | 0.315** | (0.132) |
| HH Income 4th Quartile | 0.378*** | (0.089) | 0.359*** | (0.094) | 0.263* | (0.143) |
| Small/Medium town | -0.093 | (0.058) | -0.132** | (0.061) | -0.003 | (0.086) |
| City | -0.350*** | (0.064) | -0.347*** | (0.068) | -0.258*** | (0.098) |
| Cyprus | 1.632*** | (0.149) | 1.881*** | (0.166) | 1.104*** | (0.212) |
| Czech Rep. | 1.924*** | (0.131) | 2.141*** | (0.150) | 1.185*** | (0.185) |
| Estonia | 1.124*** | (0.130) | 1.425*** | (0.150) | 0.312 | (0.196) |
| Hungary | 0.998*** | (0.130) | 1.168*** | (0.150) | 0.680*** | (0.186) |
| Latvia | 1.044*** | (0.127) | 1.317*** | (0.149) | 0.330* | (0.196) |
| Lithuania | 1.100*** | (0.133) | 1.392*** | (0.154) | 0.128 | (0.210) |
| Malta | 1.605*** | (0.163) | 1.968*** | (0.178) | 0.874*** | (0.244) |
| Poland | 0.522*** | (0.123) | 0.748*** | (0.145) | 0.164 | (0.185) |
| Romania | 0.425*** | (0.134) | 0.531*** | (0.160) | 0.230 | (0.198) |
| Slovakia | 2.047*** | (0.127) | 2.276*** | (0.145) | 1.296*** | (0.182) |
| Slovenia | 1.501*** | (0.126) | 1.704*** | (0.147) | 0.800*** | (0.186) |
| Log likelihood | -7,596.218 | | -6,625.982 | | -3273.130 | |
| Pseudo R2 | 0.080 | | 0.084 | | 0.082 | |
| Wald χ^2 | 1224.67*** | | 1,093.05*** | | 562.47*** | |
| No. of observations | 8,899 | | 8,901 | | 8,899 | |

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Civic participation is measured as active participation in voluntary organizations (see the text for precise wording of the question and list of organizations). Putnam groups are charities, religious organizations, cultural or artistic organizations, youth organizations, sports clubs and associations, hobby clubs, and other clubs or organizations. Olsonian groups are trade unions or political parties, human rights movements or organizations, organizations for the protections of nature, animals and the environment, and consumer organizations.

Table 5: Individual determinants of civic participation in old member countries

| | Overall Civic Participation | std. error | Putnam Groups | std. error | Olsonian Groups | std. error |
|------------------------|-----------------------------|------------|---------------|------------|-----------------|------------|
| Female | -0.242*** | (0.041) | -0.215*** | (0.042) | -0.166*** | (0.054) |
| Married | 0.020 | (0.050) | -0.022 | (0.050) | 0.228*** | (0.070) |
| Age | 0.041*** | (0.007) | 0.022*** | (0.008) | 0.081*** | (0.012) |
| Age squared | -0.0004*** | (0.0001) | -0.0002** | (0.0001) | -0.0008*** | (0.0001) |
| Children | -0.031 | (0.031) | -0.071** | (0.032) | 0.120*** | (0.044) |
| HH Size | 0.027 | (0.022) | 0.074*** | (0.023) | -0.159*** | (0.035) |
| Secondary | 0.291*** | (0.057) | 0.261*** | (0.059) | 0.328*** | (0.082) |
| University | 0.837*** | (0.064) | 0.728*** | (0.067) | 0.789*** | (0.088) |
| Student | 1.015*** | (0.098) | 1.153*** | (0.104) | 0.355*** | (0.143) |
| Self-employed | -0.140 | (0.090) | 0.120 | (0.089) | -0.649*** | (0.123) |
| White collar | 0.090 | (0.059) | 0.116* | (0.061) | -0.037 | (0.074) |
| House person | -0.199*** | (0.080) | 0.034 | (0.081) | -0.690*** | (0.113) |
| Unemployed | -0.165* | (0.090) | -0.020 | (0.092) | -0.332*** | (0.123) |
| Retiree | -0.095 | (0.081) | 0.164* | (0.085) | -0.521*** | (0.112) |
| Farmer/fisherman | 0.291** | (0.150) | 0.407*** | (0.163) | 0.096 | (0.217) |
| HH Income 2nd Quartile | 0.249*** | (0.060) | 0.195*** | (0.062) | 0.269*** | (0.084) |
| HH Income 3rd Quartile | 0.649*** | (0.064) | 0.551*** | (0.065) | 0.644*** | (0.091) |
| HH Income 4th Quartile | 0.756*** | (0.069) | 0.636*** | (0.071) | 0.723*** | (0.098) |
| Denmark | 1.716*** | (0.110) | 0.952*** | (0.113) | 1.991*** | (0.149) |
| Germany West | 0.552*** | (0.112) | 0.645*** | (0.113) | 0.109 | (0.165) |
| Greece | -0.979*** | (0.124) | -0.914*** | (0.127) | -0.933*** | (0.208) |
| Italy | -0.415*** | (0.129) | -0.361*** | (0.131) | -0.409** | (0.206) |
| Spain | -0.697*** | (0.134) | -0.681*** | (0.138) | -0.722*** | (0.226) |
| France | -0.285*** | (0.115) | -0.173 | (0.118) | -0.584*** | (0.182) |
| Ireland | 0.520*** | (0.131) | 0.657*** | (0.135) | -0.126 | (0.207) |
| N-Ireland | 0.501*** | (0.177) | 0.637*** | (0.182) | -0.233 | (0.273) |
| Luxembourg | 0.747*** | (0.152) | 0.537*** | (0.146) | 0.929*** | (0.215) |
| Netherlands | 1.753*** | (0.112) | 1.307*** | (0.113) | 1.753*** | (0.154) |
| Portugal | -0.688*** | (0.128) | -0.602*** | (0.132) | -0.950*** | (0.221) |
| Great Britain | 0.817*** | (0.123) | 0.736*** | (0.124) | 0.665*** | (0.170) |
| Germany East | -0.202* | (0.113) | -0.131 | (0.116) | -0.457*** | (0.177) |
| Finland | 1.143*** | (0.108) | 0.702*** | (0.112) | 1.455*** | (0.149) |
| Sweden | 2.073*** | (0.143) | 0.984*** | (0.150) | 2.620*** | (0.184) |
| Austria | 0.478*** | (0.119) | 0.408*** | (0.119) | 0.513*** | (0.168) |
| Log likelihood | -1,1367.22 | | -10,210.34 | | -5,870.042 | |
| Pseudo R2 | 0.127 | | 0.081 | | 0.198 | |
| Wald χ^2 | 2,923.19*** | | 1,568.99*** | | 2,273.74 | |
| No. of observations | 10,699 | | 10,699 | | 10,699 | |

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Civic participation is measured as active participation in voluntary organizations (see the text for precise wording of the question and list of organizations). Putnam groups are charities, religious organizations, cultural or artistic organizations, youth organizations, sports clubs and associations, hobby clubs, and other clubs or organizations. Olsonian groups are trade unions or political parties, human rights movements or organizations, organizations for the protections of nature, animals and the environment, and consumer organizations.

Table 6: Individual determinants of social networks in new member countries

| | Networks if depressed | std. error | Networks if needs job | std. error | Networks to borrow | std. error |
|------------------------|--------------------------|------------|--------------------------|------------|-----------------------|------------|
| Female | 0.343*** | (0.057) | -0.119** | (0.050) | 0.081 | (0.053) |
| Married | 0.096 | (0.070) | 0.062 | (0.062) | 0.127* | (0.066) |
| Age | -0.059*** | (0.011) | -0.065*** | (0.010) | -0.071*** | (0.010) |
| Age squared | 0.0004*** | -0.0001 | 0.0005*** | -0.0001 | 0.0006*** | -0.0001 |
| Children | 0.042 | (0.027) | 0.026 | (0.025) | 0.086*** | (0.026) |
| HH Size | -0.156*** | (0.027) | -0.148*** | (0.024) | -0.181*** | (0.025) |
| Secondary | 0.091*** | (0.079) | 0.122* | (0.075) | 0.298*** | (0.074) |
| University | 0.275** | (0.092) | 0.349*** | (0.086) | 0.459*** | (0.087) |
| Student | 0.385** | (0.172) | 0.258* | (0.146) | 0.235 | (0.157) |
| Self-employed | 0.344 | (0.159) | 0.486*** | (0.130) | 0.636*** | (0.161) |
| White collar | 0.098 | (0.094) | 0.217*** | (0.078) | 0.147* | (0.088) |
| House person | -0.084 | (0.120) | -0.203* | (0.109) | 0.011 | (0.114) |
| Unemployed | -0.083 | (0.113) | -0.255*** | (0.104) | -0.084 | (0.106) |
| Retiree | 0.044 | (0.106) | -0.052 | (0.095) | -0.093 | (0.100) |
| Farmer/fisherman | -0.234 | (0.224) | 0.193 | (0.197) | -0.089 | (0.213) |
| UE History: 1 | -0.169** | (0.088) | -0.320*** | (0.077) | -0.215*** | (0.084) |
| UE History: 2+ | -0.329*** | (0.117) | -0.296*** | (0.104) | -0.438*** | (0.108) |
| HH Income 2nd Quartile | 0.244*** | (0.082) | 0.278*** | (0.079) | 0.240*** | (0.078) |
| HH Income 3rd Quartile | 0.362*** | (0.087) | 0.399*** | (0.081) | 0.420*** | (0.082) |
| HH Income 4th Quartile | 0.621*** | (0.098) | 0.866*** | (0.089) | 0.749*** | (0.094) |
| Small/Medium town | -0.064 | (0.067) | -0.122** | (0.060) | -0.141** | (0.063) |
| City | -0.046 | (0.073) | -0.055 | (0.066) | -0.239*** | (0.069) |
| Cyprus | -0.213 | (0.138) | 0.814*** | (0.136) | -0.312** | (0.136) |
| Czech Rep. | 0.815*** | (0.147) | 1.025*** | (0.129) | 0.339*** | (0.137) |
| Estonia | 0.030 | (0.123) | 0.154 | (0.115) | 0.162 | (0.122) |
| Hungary | 0.392*** | (0.121) | 1.072*** | (0.112) | 0.145 | (0.116) |
| Latvia | -0.191 | (0.119) | -0.113 | (0.115) | -0.536*** | (0.114) |
| Lithuania | -0.003 | (0.131) | 0.251** | (0.123) | -0.361*** | (0.125) |
| Malta | 0.750*** | (0.173) | 0.370** | (0.154) | -0.609*** | (0.151) |
| Poland | 0.629*** | (0.112) | 0.452*** | (0.100) | 0.285*** | (0.105) |
| Romania | -0.087 | (0.115) | 0.233** | (0.113) | -0.189* | (0.112) |
| Slovakia | 1.209*** | (0.154) | 0.528*** | (0.118) | 0.447*** | (0.128) |
| Slovenia | 0.150 | (0.128) | 1.258*** | (0.121) | 0.221* | (0.126) |
| Constant | 2.470*** | (0.299) | 1.386*** | (0.267) | 2.648*** | (0.285) |
| Log likelihood | -4,259.41 | | -4,938.50 | | -4,646.19 | |
| Pseudo R2 | 0.055 | | 0.092 | | 0.057 | |
| Wald χ^2 | 458.86*** | | 859.85*** | | 522.32*** | |
| No. of observations | 8,625 | | 7,852 | | 8,303 | |

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Networks variables take value 1 if the respondent can rely on other people outside their immediate household if she feels depressed, needs a job for herself or a family member, or needs to borrow money to pay an urgent bill.

Table 7: Individual determinants of social networks in old member countries

| | Networks if depressed | std. error | Networks if needs job | std. error | Networks to borrow | std. error |
|------------------------|--------------------------|------------|--------------------------|------------|-----------------------|------------|
| Female | 0.557*** | (0.062) | -0.043 | (0.049) | 0.191*** | (0.056) |
| Married | -0.052 | (0.068) | 0.046 | (0.055) | -0.003 | (0.062) |
| Age | -0.027*** | (0.011) | -0.039*** | (0.009) | -0.025*** | (0.010) |
| Age squared | 0.0001 | (0.0001) | 0.0002*** | (0.0001) | 0.0001 | (0.0001) |
| Secondary | 0.213*** | (0.076) | 0.172*** | (0.063) | 0.093 | (0.070) |
| University | 0.396*** | (0.095) | 0.293*** | (0.073) | 0.205*** | (0.084) |
| Student | 0.713*** | (0.181) | 0.378*** | (0.131) | 0.538*** | (0.157) |
| Self-employed | 0.257* | (0.146) | 0.105 | (0.114) | 0.367*** | (0.135) |
| White collar | 0.303*** | (0.100) | 0.124* | (0.075) | 0.268*** | (0.088) |
| House person | 0.065 | (0.124) | -0.082 | (0.092) | 0.126 | (0.107) |
| Unemployed | -0.272** | (0.117) | -0.732*** | (0.094) | -0.315*** | (0.104) |
| Retiree | 0.023 | (0.115) | -0.115 | (0.090) | -0.040 | (0.105) |
| Farmer/fisherman | 0.459* | (0.278) | -0.021 | (0.215) | -0.003 | (0.239) |
| HH Income 2nd Quartile | 0.304*** | (0.081) | 0.301*** | (0.066) | 0.225*** | (0.073) |
| HH Income 3rd Quartile | 0.391*** | (0.090) | 0.477*** | (0.073) | 0.529*** | (0.084) |
| HH Income 4th Quartile | 0.548*** | (0.104) | 0.615*** | (0.080) | 0.652*** | (0.093) |
| Small/Medium town | -0.063 | (0.070) | -0.140*** | (0.057) | -0.081 | (0.064) |
| City | 0.011 | (0.077) | -0.021 | (0.062) | 0.015 | (0.070) |
| Denmark | 0.695*** | (0.162) | 0.217* | (0.130) | 1.314*** | (0.144) |
| Germany West | 0.084 | (0.144) | -0.212* | (0.126) | 0.264** | (0.126) |
| Greece | -0.494*** | (0.141) | -0.376*** | (0.129) | 0.345*** | (0.130) |
| Italy | 0.293* | (0.162) | 0.256* | (0.144) | 0.957*** | (0.152) |
| Spain | 1.142*** | (0.185) | 0.665*** | (0.144) | 1.807*** | (0.172) |
| France | 0.606*** | (0.160) | 0.165 | (0.131) | 0.857*** | (0.136) |
| Ireland | 1.489*** | (0.286) | 0.806*** | (0.187) | 1.573*** | (0.219) |
| N-Ireland | 0.978*** | (0.285) | 0.310 | (0.204) | 1.344*** | (0.243) |
| Luxembourg | 0.447*** | (0.182) | 0.348** | (0.155) | 0.680*** | (0.157) |
| Netherlands | 1.228*** | (0.200) | 0.510*** | (0.145) | 1.628*** | (0.175) |
| Portugal | 0.316** | (0.157) | 0.473*** | (0.140) | 0.874*** | (0.143) |
| Great Britain | 0.722*** | (0.177) | 0.326** | (0.143) | 0.959*** | (0.150) |
| Germany East | -0.024 | (0.140) | -0.394*** | (0.124) | 0.068 | (0.124) |
| Finland | 0.232 | (0.150) | -0.317*** | (0.127) | 1.156*** | (0.140) |
| Sweden | 1.079*** | (0.167) | 0.020 | (0.125) | 1.908*** | (0.156) |
| Austria | 0.062 | (0.155) | 0.299** | (0.141) | 0.486*** | (0.140) |
| Constant | 1.501*** | (0.281) | 1.526*** | (0.231) | 0.801*** | (0.253) |
| Log likelihood | -4,001.45 | | -5,622.07 | | -4,612.88 | |
| Pseudo R2 | 0.080 | | 0.074 | | 0.091 | |
| Wald χ^2 | 626.11*** | | 788.80*** | | 808.76*** | |
| No. of observations | 10,376 | | 9,650 | | 9,952 | |

Notes: Estimated with ordered logit; Significance levels: *** 1%, ** 5% and * 10%. Networks variables take value 1 if the respondent can rely on other people outside their immediate household if she feels depressed, needs a job for herself or a family member, or needs to borrow money to pay an urgent bill.

Table 8: Individual determinants of social capital: Pooled data

| | Overall Civic Participation | std. error | Putnam Groups | std. error | Olsonian Groups | std. error | Networks if depressed | std. error | Networks if needs job | std. error | Networks to borrow | std. error |
|------------------------|-----------------------------|------------|---------------|------------|-----------------|------------|-----------------------|------------|-----------------------|------------|--------------------|------------|
| Female | -0.240*** | (0.030) | -0.202*** | (0.035) | -0.145*** | (0.041) | 0.421*** | (0.040) | -0.077*** | (0.033) | 0.167*** | (0.037) |
| Married | 0.071** | (0.036) | 0.111*** | (0.042) | 0.336*** | (0.052) | -0.055 | (0.046) | -0.008 | (0.038) | 0.016 | (0.042) |
| Age | 0.034*** | (0.006) | 0.031*** | (0.007) | 0.091*** | (0.010) | -0.033*** | (0.007) | -0.043*** | (0.006) | -0.038*** | (0.007) |
| Age squared | -0.0003*** | (0.0001) | -0.0003*** | (0.0001) | -0.0008*** | (0.0001) | 0.0002*** | (0.0001) | 0.0003*** | (0.0001) | 0.0003*** | (0.0001) |
| Children | 0.040*** | (0.016) | 0.036** | (0.019) | 0.146*** | (0.023) | | | | | | |
| HH Size | -0.063*** | (0.014) | -0.077*** | (0.016) | -0.168*** | (0.020) | | | | | | |
| Secondary | 0.522*** | (0.043) | 0.489*** | (0.055) | 0.635*** | (0.067) | 0.238*** | (0.051) | 0.082* | (0.045) | 0.189*** | (0.047) |
| University | 1.103*** | (0.047) | 1.063*** | (0.058) | 1.320*** | (0.069) | 0.383*** | (0.059) | 0.241*** | (0.051) | 0.401*** | (0.055) |
| Student | 1.454*** | (0.074) | 1.266*** | (0.090) | 1.094*** | (0.115) | 0.626*** | (0.116) | 0.326*** | (0.092) | 0.488*** | (0.102) |
| Self-employed | -0.200*** | (0.069) | -0.243*** | (0.078) | -0.618*** | (0.091) | 0.287*** | (0.104) | 0.295*** | (0.084) | 0.501*** | (0.102) |
| White collar | 0.120*** | (0.045) | 0.091* | (0.051) | -0.026 | (0.056) | 0.250*** | (0.066) | 0.239*** | (0.052) | 0.226*** | (0.060) |
| House person | -0.338*** | (0.060) | -0.474*** | (0.076) | -0.973*** | (0.094) | 0.079 | (0.080) | -0.068 | (0.064) | 0.011 | (0.072) |
| Unemployed | -0.531*** | (0.064) | -0.580*** | (0.078) | -0.673*** | (0.092) | -0.311*** | (0.073) | -0.663*** | (0.063) | -0.343*** | (0.067) |
| Retiree | -0.350** | (0.058) | -0.387*** | (0.070) | -0.769*** | (0.086) | 0.023 | (0.074) | -0.079 | (0.063) | -0.056 | (0.068) |
| Farmer/fisherman | -0.227*** | (0.108) | -0.266* | (0.140) | -0.408*** | (0.159) | 0.024 | (0.165) | 0.038 | (0.142) | 0.001 | (0.150) |
| HH Income 2nd Quartile | 0.162*** | (0.045) | 0.158*** | (0.055) | 0.181*** | (0.066) | 0.227*** | (0.055) | 0.253*** | (0.048) | 0.228*** | (0.050) |
| HH Income 3rd Quartile | 0.314*** | (0.046) | 0.268*** | (0.056) | 0.287*** | (0.067) | 0.284*** | (0.058) | 0.370*** | (0.050) | 0.388*** | (0.054) |
| HH Income 4th Quartile | 0.419*** | (0.050) | 0.364*** | (0.059) | 0.320*** | (0.071) | 0.504*** | (0.065) | 0.709*** | (0.054) | 0.606*** | (0.060) |
| Small/Medium town | | | | | | | 0.000 | (0.046) | -0.133*** | (0.039) | -0.091** | (0.043) |
| City | | | | | | | -0.063 | (0.050) | -0.099** | (0.042) | -0.167*** | (0.046) |
| New members | -0.949*** | (0.035) | 0.258*** | (0.039) | -1.144*** | (0.051) | -0.509*** | (0.039) | -0.735*** | (0.033) | -0.440*** | (0.036) |
| Constant | | | | | | | 2.054*** | (0.179) | 1.755*** | (0.151) | 1.845*** | (0.164) |
| Log likelihood | -20,527.24 | | -14,013.01 | | -10,079.12 | | -8,734.46 | | -11,075.22 | | -9,840.80 | |
| Pseudo R2 | 0.061 | | 0.045 | | 0.093 | | 0.042 | | 0.074 | | 0.042 | |
| Wald χ^2 | 2,435.37*** | | 1,274.67*** | | 1,716.89*** | | 738.56*** | | 1,543.71*** | | 790.64*** | |
| No. of observations | 19,854 | | 19,661 | | 19,702 | | 19,293 | | 17,774 | | 18531 | |

Notes: Estimated with logit or ordered logit; Significance levels: * 5% and ** 10%.

Table 9: Individual and aggregate determinants of social capital: Pooled data

| | Overall Civic Participation | std. error | Putnam Groups | std. error | Olsonian Groups | std. error | Networks if depressed | std. error | Networks if needs job | std. error | Networks to borrow | std. error |
|-------------------------------|--------------------------------|------------|------------------|------------|--------------------|------------|--------------------------|------------|--------------------------|------------|-----------------------|------------|
| Female | -0.258*** | (0.055) | -0.220*** | (0.065) | -0.195*** | (0.068) | 0.429*** | (0.060) | -0.111*** | (0.036) | 0.124** | (0.050) |
| Married | -0.023 | (0.056) | 0.011 | (0.071) | 0.200*** | (0.066) | -0.021 | (0.056) | -0.015 | (0.037) | 0.039 | (0.057) |
| Age | 0.032*** | (0.007) | 0.028** | (0.012) | 0.087*** | (0.009) | -0.034*** | (0.008) | -0.045*** | (0.006) | -0.039*** | (0.007) |
| Age squared | -0.0003*** | (0.0001) | -0.0003** | (0.0001) | -0.0008*** | (0.0001) | 0.0002*** | (0.0001) | 0.0003*** | (0.0001) | 0.0003*** | (0.0001) |
| Children | -0.030 | (0.027) | -0.036 | (0.033) | 0.060 | (0.039) | | | | | | |
| HH Size | 0.036 | (0.023) | 0.014 | (0.026) | -0.073** | (0.029) | | | | | | |
| Secondary | 0.333*** | (0.086) | 0.353*** | (0.112) | 0.419*** | (0.096) | 0.193*** | (0.071) | 0.042 | (0.063) | 0.142* | (0.082) |
| University | 0.837*** | (0.090) | 0.823*** | (0.128) | 0.908*** | (0.091) | 0.309*** | (0.082) | 0.193*** | (0.067) | 0.300*** | (0.087) |
| Student | 1.153*** | (0.118) | 0.933*** | (0.225) | 0.581*** | (0.195) | 0.520*** | (0.132) | 0.265* | (0.137) | 0.393*** | (0.144) |
| Self-employed | 0.039 | (0.095) | -0.064 | (0.150) | -0.363*** | (0.136) | 0.341*** | (0.114) | 0.299*** | (0.090) | 0.524*** | (0.107) |
| White collar | 0.169** | (0.068) | 0.129 | (0.079) | 0.064 | (0.073) | 0.274*** | (0.070) | 0.248*** | (0.065) | 0.268*** | (0.064) |
| House person | -0.211 | (0.153) | -0.394* | (0.201) | -0.664*** | (0.247) | 0.110 | (0.135) | 0.038 | (0.095) | 0.193** | (0.091) |
| Unemployed | -0.430*** | (0.079) | -0.462*** | (0.095) | -0.563*** | (0.130) | -0.281*** | (0.101) | -0.623*** | (0.081) | -0.348*** | (0.082) |
| Retiree | -0.203** | (0.089) | -0.244* | (0.142) | -0.676*** | (0.170) | 0.060 | (0.078) | -0.024 | (0.075) | -0.011 | (0.077) |
| Farmer/fisherman | 0.159 | (0.248) | 0.058 | (0.261) | -0.070 | (0.325) | 0.039 | (0.183) | 0.108 | (0.144) | -0.006 | (0.157) |
| HH Income 2nd Quartile | 0.146* | (0.072) | 0.128 | (0.091) | 0.167** | (0.082) | 0.182*** | (0.064) | 0.217*** | (0.072) | 0.162** | (0.067) |
| HH Income 3rd Quartile | 0.478*** | (0.095) | 0.426*** | (0.132) | 0.486*** | (0.127) | 0.253*** | (0.082) | 0.358*** | (0.071) | 0.340*** | (0.087) |
| HH Income 4th Quartile | 0.513*** | (0.114) | 0.453*** | (0.151) | 0.466*** | (0.170) | 0.446*** | (0.105) | 0.709*** | (0.088) | 0.574*** | (0.107) |
| Small/Medium town | | | | | | | -0.025 | (0.058) | -0.129** | (0.057) | -0.081 | (0.062) |
| City | | | | | | | -0.028 | (0.065) | -0.057 | (0.086) | -0.102 | (0.074) |
| GDP per capita (thousands) | 0.023 | (0.024) | 0.019 | (0.027) | 0.007 | (0.022) | -0.001 | (0.017) | 0.000 | (0.018) | -0.029** | (0.013) |
| Gini coefficient | -0.049* | (0.027) | -0.071** | (0.034) | -0.064** | (0.031) | -0.008 | (0.022) | -0.022 | (0.017) | -0.004 | (0.020) |
| Non-corruption | 0.249*** | (0.092) | 0.337*** | (0.099) | 0.461*** | (0.108) | 0.156 | (0.102) | 0.022 | (0.104) | 0.292*** | (0.085) |
| Economic Freedom | 0.422** | (0.176) | 0.345* | (0.195) | 0.116 | (0.250) | -0.027 | (0.155) | 0.161 | (0.168) | -0.170 | (0.139) |
| New members | 0.942*** | (0.323) | 2.436*** | (0.409) | 0.943** | (0.404) | -0.042 | (0.300) | -0.414 | (0.311) | -0.220 | (0.244) |
| Constant | | | | | | | 1.446 | (1.173) | 1.131 | (0.951) | 1.864* | (0.957) |
| F-statistics | 12.88*** | | 19.01*** | | 36.11*** | | 21.91*** | | 71.25*** | | 14.76*** | |
| No. of observations | 19,019 | | 18,841 | | 18,882 | | 18,460 | | 17,010 | | 17,758 | |

Notes: Estimated with logit or ordered logit; Significance levels: * 5% and ** 10%. Standard errors are adjusted to account for the fact that country-level and individual variables are observed at different levels of aggregation. GDP per capita is in thousands of US dollars adjusted for purchasing-power parity. Non-corruption is the corruption perception index as compiled by Transparency International, higher values indicate less corruption. Economic freedom is the index compiled by the Fraser Institute.