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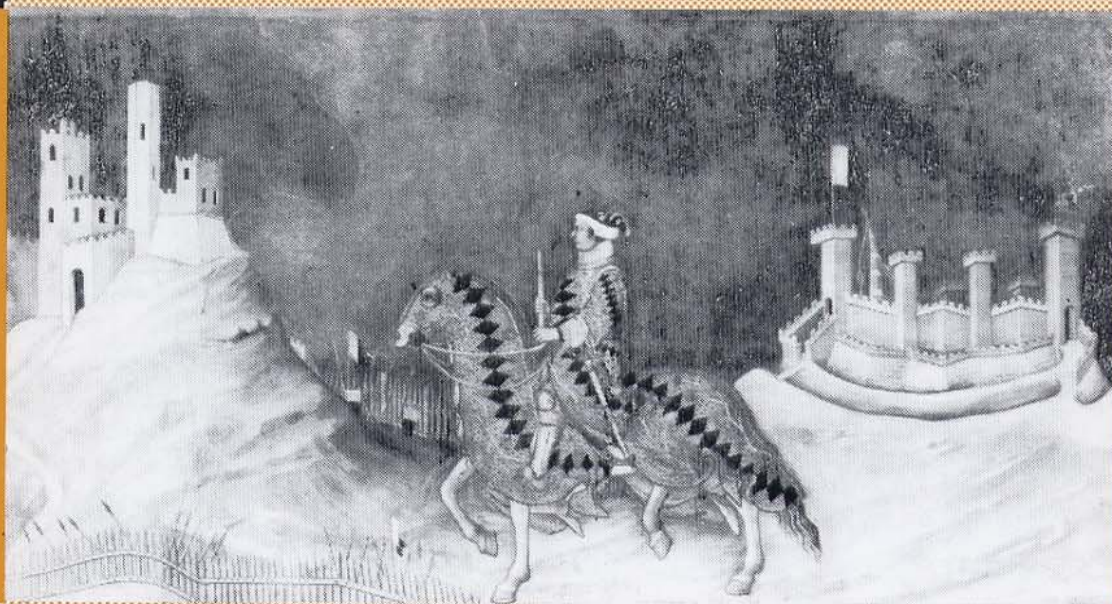


**QUADERNI DEL DIPARTIMENTO
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The Social Context of the Labor Supply

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Abstract - In this paper we empirically investigate the relationship between social capital and the supply of labor. We identify social capital with non-market relationships. Data are obtained from the US General Social Survey for the period 1976-2004. We find evidence that social capital affects the supply of labor. In particular non-instrumental relations reduce the supply of labor, whereas instrumental relations increase it. Moreover, there are substantial differences between men and women: social capital has a greater impact on the labor supply of women. Our findings suggest that Putnam's thesis that the decline of US social capital is largely due to the increase in participation of women to the labor market may be partly reversed: the decline of US intrinsic social capital has fostered women's labor market participation.

JEL Code: J2, I3, Z1

Keywords: intrinsic motivations, labor supply, relational goods, social capital

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1. Introduction

What is the impact of social capital on the labor supply? We try to answer this question by regressing the hours worked by individuals on proxies of their social capital along with controls for wage and demographic factors. We use more than 20 thousand observations from the American General Social Survey (GSS) for the period 1976-2004. We test if the social context affects labor supply decision with particular attention to differences between: i) men and women, and ii) instrumental and non-instrumental relationships.

This kind of work is unprecedented.¹ We found no empirical work regressing hours worked on social capital. The literature on social capital has concentrated on other economic effects of social capital, particularly those on growth and economic performance. The prevalent opinion emphasizes a positive effect of social capital on growth. According to Putnam, “norms and networks of civic engagement contribute to economic prosperity and are in turn reinforced by that prosperity” (1993, pg. 180), and social capital produces “aggregate economic growth” (2000, pg. 322-3).²

However, the empirical evidence in favor of a positive role of social capital on growth seems weak. Cross-sectional studies appear to show the existence of a positive relationship between social capital (generally measured in terms of generalized trust and associational activity) and economic growth (Knack and Keefer (1997) La Porta et al., (1997), Keefer and Zak (2002), Beugelsdijk et al., (2004), Beugelsdijk and Schaik (2005)). These studies have been subject, however, to severe criticism (Durlauf (2002), Durlauf and Fafchamps (2004)).^{3,4}

¹ Bowles and Park (2005), Schor (1991) and Neumark and Postlewaite (1998) have investigated the social context of the labor supply following Veblen’s ideas on the role of social comparisons in determining consumption and work decisions. Instead, we focus on a different aspect of the social determinants of the labor supply: the role of social capital. The difference with respect to the Veblenian approach is that variations in the access to social capital by an individual imply variations in his/her absolute position, not in his/her relative one.

² Particular attention has been given to the study of a channel through which social capital can have an influence on growth, i.e. the facilitation of cooperation mainly through the reduction of transitional costs. See, for example, the approach of the so-called “new economic sociology” (see Woolcock (1998)), according to which the members of communities with high stocks of social capital tend to be more able to, without cost, monitor one another’s behavior, reach informal understandings and agreements, enforce contracts, resolve disputes amicably. In such communities, one would expect a low incidence of litigation, corruption, conflicts and crime.

³ Even admitting the existence of a positive cross-sectional relationship between social capital and income, other studies find evidence of a reverse causation going from economic growth to social capital, since they do not find that high initial levels of social capital are good predictors of future economic development (see Miguel et al. (2002)).

⁴ Furthermore, some macroscopic episodes raise doubts regarding a positive vision of the role of social capital on growth. How can one conciliate such a vision with the alarm raised by Putnam himself on the decline of social capital in the US? Especially in the 1990s, this fall in social capital does not appear to have been paralleled by a decline in the U.S. potential for economic growth. According to Durlauf, Putnam “finds no relationship between the speed of the decline of social capital and economic performance across U.S. states or across time periods. Further, the relationship between social capital and socioeconomic outcomes is even harder to characterize when one looks at sub-periods. For example, the 1990s were a period of rapid economic growth in the U.S. yet it is also a period of rapid

Other authors have stressed the “downside” of social capital (see Olson (1982), Portes and Landolt (1996), Stolle and Rochon (1998), Knack (2003)): strong and long-standing groups may hinder growth either through their rent-seeking activities aimed at controlling a disproportionately large share of domestic resources, or by placing heavy obligations on members that make it more difficult for them to increase their economic opportunities by joining larger social networks. With regard to this point, one can fruitfully distinguish between “bridging” social capital – which is generated in networks spanning different communities and may be positive for growth – and “bonding” social capital – which arises among close friends or members of the same family and is generally negative for growth.

A couple of empirical studies have explicitly referred to the relationship between work hours and social capital. Putnam’s study (2000) indicates the increase in female participation in the labor market among the causes of the declining trends of social capital. This effect is due to the time constraint. More time devoted to market activities implies less time devoted to social activities. Costa and Kahn (2003) confirm that “women’s growing commitment to careers may therefore play a role in declines in social capital” (p. 40). However, the evidence provided by Putnam (2000) and Costa and Kahn (2003) is weak. It is largely based on descriptive statistics and does not allow one to draw any conclusion on causality among variables.

The relationship between social capital and the labor supply has been investigated in the context of growth modeling of the happiness paradox (e.g the stability or decline of self-reported well-being in the Western world in the last decades) based on the decline of social capital (Bartolini-Bonatti (2002, 2003, 2007)). They show that a decrease in social capital may boost the labor supply and that, at the same time, a greater supply of labor may decrease social capital. This result is obtained within endogenous or exogenous growth models. Social capital is modeled as a homogenous quantity and a public good that enters the utility or the production functions of individuals. Social capital is subject to negative externalities, which increase with the activity level. This is meant to represent the damages brought to social assets by the expansion of the market sphere of economic activity (Polanyi (1946), Hirsch (1976)). In this context, individuals are increasingly forced to rely on market goods in order to compensate for the negative impact that a decline in social capital exerts on their production or utility functions. This compensation is financed with more labor. Therefore, a decline in social capital increases both the labor supply and the activity level (or the steady state growth rate). Growth in turn, increases the negative externalities affecting social capital, feeding back the growth mechanism. Thus, the uncoordinated

decline in social capital, at least based on the sorts of measures he uses. To be clear, Putnam does attempt to associate higher social capital with better socioeconomic outcomes, our point is that the relationship between the two for the United States is even at first glance relatively complicated” (p. 12).

efforts of individuals to escape from social degradation feed a self-reinforcing growth mechanism, which leads to over-work, over-consumption and more social degradation. Decline in social capital generates growth and the long-term stability or decline of well-being, which are the stylized facts described by the happiness paradox. Growth is seen as a substitution process whereby private goods progressively replace the use of common ones, either in the production process or in consumption. In this context, the need to finance such a substitution is seen as an important factor in boosting the labor supply. In turn, an increase in the labor supply slows down social capital by increasing production and consumption. So both relationships are at work in Bartolini-Bonatti's models: the kind of causation stressed by Putnam and a reverse causation running from social capital to the labor supply. In this paper, we focus on the extent of the latter causation.

It is, however, worth noting that, apart from questions concerning the kind of causation that explains a negative correlation between social capital and the labor supply, it is not obvious that more work goes with less social capital. The workplace may be the principal locus of socialization and students familiar with labor sociology often tend to have this idea. A consequent prediction is that a positive correlation between hours worked and social capital should be observed.

Social capital trends in the US during the last 5 decades have been the object of a lively debate raised by Putnam (Putnam (2000)), and for a concise survey see Stolle and Hooghe (2004). His evidence has been criticized by Ladd (1996) and then carefully scrutinized for the variable used and the period considered by Paxton (1999), Robinson and Jackson (2001), and Costa and Kahn (2003). On balance, social capital has been confirmed as declining in the US, although not so dramatically as Putnam claimed.

Since our results show that social capital affects the market hours worked, they also suggest that trends in social capital may be connected to trends in hours worked. This may contribute to solve one of the main puzzles of the happiness literature (Easterlin (1974), (1995)). How to reconcile the evidence of a declining trend of happiness in US (Blanchflower and Oswald 2004) – despite an increasing trend of income – with the evidence of a rising trend in market hours worked in the last 30 years in the US (Schor (1991), Aguiar and Hurst (2006))? Why do Americans strive so much for money if money cannot buy happiness? In the light of other results showing that the decline in social capital is a major determinant of the US decrease in reported well-being (Bartolini, Bilancini and Pugno 2007), one may suggest that the decline of social capital may contribute to explain both trends in happiness and hours worked.

The paper is organized as follows. In Section 2, we define concepts and variables. Section 3 illustrates our data and empirical strategy. Section 4 is devoted to the estimation of the impact of social capital on the hours worked. Section 5 draws conclusions.

2. Theoretical framework: social capital, relations, motivations

Social capital (SC) is a rather vague concept and scholars often give different meanings to it. In this paper, by SC we mean the stock of non-market relationships that affect the return of available resources, either in physical or utility terms.

We further distinguish between intrinsically and extrinsically motivated SC. The concept of extrinsic motivations refers to the incentives coming from outside an individual. By contrast, major psychological schools emphasize the intrinsic motives coming from within an individual. According to Deci (1971, pg. 105), “one is said to be intrinsically motivated to perform an activity when one receives no apparent reward except the activity itself”. Notice that Deci’s definition concentrates on the non-instrumental nature of intrinsically motivated activities which directly enter the utility functions of individuals. The distinction between intrinsic and extrinsic motivations is a well-established concept in social sciences. Various empirical studies in psychology have found that extrinsic motivations can crowd out intrinsic ones. This has given rise to a lively debate in psychology (Sansone and Harackiewicz, 2000) but it has also attracted interest among economists (Frey (1997), Benabou and Tirole (2003), Kreps (1997)).

Notice that, according to such a distinction, instrumental relations are not exhausted by market relations. In fact, also non-market relations can be extrinsically motivated. Therefore, we adopt the following definitions. By *intrinsic social capital* we mean the component of SC that enters into people's utility functions. By *extrinsic social capital* we mean the component of SC that does not directly enter into people's utility functions but is instrumental to something else that may be considered valuable.

The economic importance of intrinsically motivated relationships has been emphasized using the term *relational goods*.⁵ In the following we will adopt the terminology ‘intrinsic social capital’ interchangeably with ‘relational goods’.

The framework outlined above allows a new interpretation of the relationship between social capital and the growth of a market economy. According to a long standing tradition, the individualistic and competitive values system connected with the expansion of a market economy may slow down the formation of social assets ((see Hirsch (1976), Hirschman (1982) Polanyi (1946)). However, it is not clear which part of social capital should be negatively affected. Moreover, while some parts of social capital are negatively affected, others may be enhanced by the

⁵ Uhlaner (1989), Gui and Sugden (2005), Bruni and Stanca (2007). Some studies show their positive impact on reported well-being, as Bruni and Stanca 2005. Helliwell 2006 and Helliwell and Putnam 2004 show similar results although not using the term relational goods.

market expansion. The distinction between intrinsic and extrinsic SC suggests a new approach to this issue. Market relations are definitely instrumental and, hence, extrinsic. As market relations expand alongside the growth process, intrinsic motivations may be crowded out by extrinsic ones through a change in the frame of social relations. Therefore, growth may decrease intrinsic SC while increasing extrinsic SC. This mechanism can be modeled as negative motivational externalities (as in Bartolini and Bonatti (2007)) attached to growth, which affect non-instrumental SC.

We now turn to the practical meaning that we give to SC in this paper. Our proxies of SC are marital status, social contacts, trust in individuals, membership in various groups and organizations, watching TV. Since marital status is obviously a relational variable we include it among SC indicators, although it is not always considered a social capital variable. Moreover, it is an important source of information on the family, which, according to Putnam (2000), is considered one of the main sources of social capital. We further classify marital status and social contacts (with neighbors, friends, relatives, in bars and taverns) as indicators of intrinsic SC. Besides possible extrinsic motivations, their intrinsic nature should be obvious enough. In the following, we illustrate why we also consider membership in some groups, watching TV and trust in individuals as indicators of relational goods.

Membership in groups and organizations is widely considered to be a good indicator of relational activities (also referred to as “weak ties” in the social capital literature (Olson (1982), Putnam (2000), Costa and Khan (2003), Sabatini (2006)). Notice that the risk that group membership also captures non-relational aspects is smaller than for any other SC variable available in the GSS. Moreover, given the different nature of the various groups and organizations, we can attempt a distinction between intrinsically and extrinsically motivated group memberships. For this purpose, we sort groups into two main categories, which we call, following the intuition of Knack (2003), *Putnam’s groups* and *Olson’s groups*. The distinction between Olson’s and Putnam’s groups is based on the classic works of Olson (1982) and Putnam (1993). They provide conflicting views on the impact of private associations on economic performance and social conflict. Olson (1982) emphasized the tendency of associations to act as ‘distributional coalitions’ which lobby for policies that protect the interest of special groups at the expenses of the society as a whole. Since these ‘distributional coalitions’ impose large costs to the rest of the society they negatively impact on economic growth. Growth-inhibiting policies such as tariffs, tax breaks, competition-reducing regulations or subsidies are the undesirable result of the lobbying activity of associations. Instead, according to Putnam (1993) associations are a source of general trust and social ties leading to governmental and economic efficiency. These different views motivated empirical tests aimed at

verifying if different horizontal associations, called Olsonian and Putnamian, have a different impact on economic growth (Knack (2003), Gleaser et al. (2000)).

In this paper membership in a Putnam group is interpreted as intrinsic SC, while membership in an Olson group is interpreted as extrinsic SC. In other words, membership in Putnam's groups is supposed to be mostly experienced for the pleasure of being a member (e.g. the pleasure derived by the idea of acting together with other individuals towards a common aim, the pleasure of interacting with people having the same tastes, etc.). Instead, membership in Olson's groups is supposed to be experienced only for instrumental reasons (e.g. rent-seeking). Among Putnam's groups we include service groups, church organizations, sports clubs, art and literature clubs, national organizations, hobby clubs, fraternal groups and youth associations. Among Olson's groups we include fraternity associations, unions, professional organizations and farm organizations. Three groups were left unclassified and we put them under the label of *Other groups*. We do this because it is not clear whether these groups constitute intrinsic SC or not. Among such Other groups we put veterans associations, political parties and "other groups" (the latter is the label used in the GSS for groups that do not fall under any of the types otherwise described).⁶

We also classify indicators of trust in individuals – i.e. reports of general perceived trustworthiness, helpfulness and fairness – as indicators of intrinsic SC. They can be interpreted as judgments about the behavior of others, which stem from the quality of individuals' actual relationships. In other words, we posit that people judge that others are trustworthy or helpful on the basis of their actual experiences and that these relationships are more likely to be based on trust and mutual help when they are intrinsically motivated. This does not exclude extrinsic motivations but requires intrinsic ones to play an important role.

Finally, we consider the number of hours spent watching TV as a proxy for both the quantity and the quality of relational activities, namely as a negative indicator of SC. Apart from the time constraint – which reasonably supports our interpretation – we also suppose that individuals spending much time watching TV are less engaged, on average, in their relational activities and, in particular, those that are intrinsically motivated (Bruni and Stanca (2006)). The basic idea is that watching TV reduces relational activities and that intrinsic relations are more elastic to watching TV than extrinsic ones.

⁶ Knack (2003) does not refer to intrinsic and extrinsic motivations. Moreover, the types of groups recognized in the GSS do not coincide with those recognized in the database used by Knack (2003) so our classifications are partly different. However, these are not the only reasons for the minor differences between Knack's classification and ours. Some further changes are due to a different interpretation: groups whose main objective is to foster collective actions do not necessarily fall in the Olson category. For instance, we put political parties among Other groups – and not among Olson's groups – because we believe that membership in a political party is not necessarily a matter of rent-seeking.

3. Data and Empirical Strategy

We study the impact of SC on work hours decisions using the US General Social Survey (GSS) database. The GSS has three useful characteristics. Firstly, and most importantly, it is rich in SC indicators (ranging from social contacts to trust to membership in various groups and organizations). Secondly, the GSS covers quite a long period of time – more than 25 years – and counts more than 45 thousand observations that are representative of the US census regions. This helps to control for shocks in different points in time and regions of the US. Finally, the GSS has a measure of work hours as well as several other demographic and socio-economic indicators, which allow for further important controls. Table 6 reports descriptive statistics of the variables used. Their detailed definition can be found in the appendix.

The GSS also has a few limitations. First, the applied sampling method varies across surveys (either for investigating a specific issue or because new and better sampling methods became available). Second, the GSS is not a panel but a cross-section: the interviewed subjects change year by year. This prevents us from controlling for unobserved personal characteristics. Third, there is no direct measure of wages or labor income. The best proxy of labor income available for most observations is personal income, which is, however, a rather a poor one because it does not distinguish between labor earnings and returns to private assets. Another good proxy is the occupational prestige score (OPS), an index of earning capacity developed by sociologists, which has been shown to account for a large part of the wage variance. Unfortunately, this index is available starting only from 1988, meaning that if we want to use it, we must give up about half of the observations of the GSS dataset. This is definitely a serious drawback. Finally, the set of questions asked in the GSS has been partly modified from survey to survey. This is due to the GSS initial design and its subsequent adjustments. Put simply, the GSS is composed of two parts: a sort of “core” – a bunch of questions that were asked in every survey – and a collection of “modules” – groups of topic specific questions – that are associated to some surveys only. Most SC variables are available only for a subset of the available observations. Unfortunately, the intersection of these subsets only counts about four thousands observations (less than 10% of the total database). This implies that if we want to use all available SC variables in the same regression, we are very likely to incur in sample selection biases.

Our empirical strategy tries to cope with all such limitations. The problem of a non-homogeneous sampling across surveys does not really constitute a serious impediment. Thanks to the large variety of question asked in the GSS, we can handle it by controlling for demographic and

other individual characteristics.⁷ The lack of panel observations is a more serious issue because unobserved personal traits may play a role in labor supply decisions. A possible solution could be to build a pseudo-panel but this would imply a substantial loss of information due to the process of constructing representative individuals. It is, moreover, not clear what level of aggregation should be used to construct the representative individuals. Therefore, we prefer to apply a simpler cross-sectional analysis. In any case, although we recognize that unobserved individual characteristics may be important, they are not necessarily essential to our study. Our primary aim is to estimate the impact of SC on labor supply decision. Thus, the estimations we are interested in would be biased by the lack of controls for unobserved individual characteristics only if the *same* characteristics were to affect both labor supply decision *and* SC. Of course, we cannot exclude that this is the case but there is neither any strong evidence nor any well established theory suggesting that it is likely to be so.

Much worse limitations are, instead, the lack of a reliable measure of wages or labor earnings and the possible selection bias that can arise if all SC variables are included in the same regression. With respect to the former problem, our strategy will be to sidestep it by focusing on the reduced form model only. With respect to the latter problem, our strategy will be to run a separate regression for each different group of SC variables so as to minimize the loss of observations in each regression. Further discussion of the advantages and disadvantages of our choices is presented below and in the next section, along with the description of the empirical model and the estimations results.

We stress that our objective is not to contribute to the large body of literature which investigates the effect of wages, non-labor income or other standard economic variables on the supply of labor. Instead, our objective is to estimate the effect of SC on work hours decisions, whenever such an effect is direct or goes through other variables. In other words our primary interest lies in the estimates of a reduced form model where SC is among the dependent variables. In other words, the exact structural model that has generated the reduced form model only constitutes a secondary interest for us. This approach greatly simplifies our needs for identifying assumptions and, most importantly, substantially helps to cope with the lack of a wage measure.

In order to highlight what assumptions are crucial to our investigation we introduce first a simple structural model of labor supply decisions, which is consistent with the reduced form model to be estimated. The model is a system of two equations, i.e.

⁷ The GSS also provides sample weights that can be used to homogenize the samples. However, weights are partly arbitrary constructs and, moreover, they may substantially bias our estimates. Therefore, we prefer not to use them.

$$hh = \alpha_1 X + \beta_1 w + \gamma_1 Y + \delta_1 SC + \varepsilon_1 \quad (1)$$

$$w = \alpha_2 X + \beta_2 Z + \gamma_2 Y + \delta_2 SC + \varepsilon_2 \quad (2)$$

where hh is the vector of hours worked, X is a matrix of personal characteristics such as gender, age, race, education, etc (including dummies for both region of residence and year of interview), w is the vector of offered wages, Y is the vector of non-personal incomes, Z is a vector of regional unemployment rates (the only data not coming from the GSS but obtained from the National Census Bureau), SC is a matrix of SC variables, ε_1 and ε_2 are jointly normally distributed with zero mean, variance equal to, respectively, σ_1^2 and σ_2^2 and covariance equal to σ_{12} .⁸

Notice that, although in (1)-(2) we assume that SC can affect the offered wage w , this is just a possibility. In fact, the coefficient δ_2 may well be zero and wage be determined only by personal and regional characteristics. In other terms, we allow for the possibility of SC to exert a direct influence on wages but we do not require it. The same applies to non-personal income Y . Instead, we *do* assume that offered wage does not affect SC. This is an important assumption for our empirical strategy because it assures that a poor control for wages does not bias the estimates regarding SC variables.

From the system (1)-(2) we obtain the following reduced form model

$$hh = (\alpha_1 + \beta_1 \alpha_2) X + \beta_1 \beta_2 Z + (\gamma_1 + \beta_1 \gamma_2) Y + (\delta_1 + \beta_1 \delta_2) SC + \beta_1 \varepsilon_1 + \varepsilon_1 \quad (3)$$

which is better rewritten as

$$hh = \pi_1 X + \pi_2 Z + \pi_3 Y + \pi_4 SC + \mu \quad (4)$$

where $\pi_1 = (\alpha_1 + \beta_1 \alpha_2)$, $\pi_2 = \beta_1 \beta_2$, $\pi_3 = (\gamma_1 + \beta_1 \gamma_2)$, $\pi_4 = (\delta_1 + \beta_1 \delta_2)$ and $\mu = (\beta_1 \varepsilon_1 + \varepsilon_1)$. Since ε_1 and ε_2 are jointly normally distributed, μ is normally distributed as well with mean zero and variance equal to $\sigma_\mu^2 = (\sigma_1^2 + \beta_1^2 \sigma_2^2 + 2\beta_1 \sigma_{12})$.

As anticipated above, our objective is to estimate (4). We do not attempt to identify the structural parameters of the system (1)-(2). Actually, since we lack a reliable measure of w , without further assumptions about the structural parameters we are unable to identify them. This further motivates our choice to focus on (4) instead of the system (1)-(2). In fact, under the rather weak assumption that the “true” structural model is consistent with the reduced form (4), we are able to estimate the “gross” – i.e. direct plus indirect – impact of SC on labor supply decisions without the need of a measure of w . Besides, there are other advantages. First, we do not need to specify any special assumption about the relationship between offered wage and SC or between offered wage and non-personal income. Second, we can dispense with the typical problem of sample selection

⁸ While the stochastic terms of equations (1) and (2) do not need to be independent, the assumption of joint normality of ε_1 and ε_2 is necessary to have a reduced form model with a normally distributed error term.

biases due to the impossibility of observing the wage offered to those who have decided not to work. Finally, under the assumption that SC is not influenced by w , we can forget about all estimation biases due to omitted variables in equation (2) because we are just interested in the estimates of π_4 while such biases would affect only the estimates of π_1 , π_2 and π_3 .

Of course, this approach also has disadvantages. First, it does not allow us to distinguish between the direct effect of SC on work hours and the indirect effect that goes through the offered wage. Hence, we will not be able to say whether social capital affects the supply of labor because it affects the ratio between the marginal utility of consumption and leisure or because it affects the amount of consumption granted by an hour of work. Second, our capability to judge the goodness of our control for w is limited by the fact that we do not have an explicit estimate of its impact on work hours decisions. However, the latter is not a serious drawback since, as we have already said, under the assumption that the offered wage does not affect SC, even a poor control for w is enough for obtaining unbiased estimates of π_4 .

In the following section, we illustrate the results of five sets of regressions, one for each group of SC variables we use: marital status, social contacts, social trust, membership in groups/organizations and watching TV. Each group of variables is used in just one set of regressions, with the only exception of marital status ones, which are maintained in all regressions. The chosen grouping of SC variables, besides being meaningful from a theoretical viewpoint, divides the regressors in such a way as to maximize the number of observations used in each set of regressions. As anticipated, we do this instead of running a single regression with all SC variables in order to avoid sample selection biases. The drawback of such a strategy is that there is a systematic omission of variables that are assumed to be relevant and, hence, a possible systematic bias of the estimates of SC variables. Nevertheless, this seems to us the best available solution. Apart from marital status variables (which in any case are maintained in all regressions), correlations among SC variables are rather low (see Table 7), suggesting that the possible bias should be, if present, rather small. Moreover, having only a single group of SC variables has the further advantage of allowing an easier IV estimation when the risk of endogeneity problems is particularly high.

4. Estimation Results

Our baseline sample is constituted by the GSS interviews conducted between 1976 and 2004, from which we have eliminated two types of individuals. The first type are individuals who responded that they did not work in the previous week but only due to temporary reasons (e.g. disease,

vacation, etc). The second type are individuals who declared to work but to be self-employed. For the first type of individuals, we have no information about the hours worked and, hence, we cannot use such observations. The second type of individuals are excluded because we have no information about the assets they own and, hence, we are not able to control for the work incentives they have because they own the firm they work for.⁹

In the first set of regressions – namely 1, 2, 3, 4, 5 and 6 – we estimate equation (4), including, for what concerns SC variables, only those related to marital status. These regressions have two objectives. The first, and main one, is to measure the impact of marital relationships on work hours decisions. The second is to put to the test our controls for the offered wage w in order to check how crucial our assumption is that w does not affect SC. We do this to have an idea of how informative are our estimates of π_1 , π_2 and π_3 . The test is based on the use of the occupational prestige score (OPS) index.¹⁰ We run regressions with and without OPS and then we compare results to check the relative performance of our controls for w . Results are shown in Table 2.¹¹

Several aspects of the estimates of Regressions 1-6 seem to suggest that our controls for w perform as well as the occupational prestige score index. First, the R -square is about .3, which is in line with most labor supply studies. Most important, it is almost the same in each pair of regressions – all, men and women – substantially showing that the inclusion of the OPS index does not add much to the explanation of the observed variance of hours worked. Second, the coefficients of regressors not related to the OPS index, such as marital status variables, household size, children, non-personal household income, race and age, are not qualitatively affected by the inclusion of the OPS index. Therefore, to the extent that the OPS index is a good proxy of offered wages, this suggests that these estimates are not biased by omitted variables in equation (2).¹² Last, regional unemployment rate has a large coefficient and is highly significant when the OPS index is not included, while it has a much smaller coefficient and is definitely not significant when the OPS index is included. Since regional unemployment rate is our proxy for the local determinants of

⁹ Self-employed individuals constitute about 10% of the whole GSS dataset (5,035 observations), so although their exclusion is not a major reduction, it is not a negligible one. We run additional regressions (not reported here) in which we included self-employed individuals. We found qualitatively similar results.

¹⁰ The OPS index has 88 different scores going from a minimum of 9.97 to a maximum of 90.2. In other words, 88 categories of professions that are judged by interviewed subjects and whose desirability depends on both material (e.g. income, amenities, etc) and immaterial aspects (e.g. psychological gratification, social utility, etc). See, among others, Goldthorpe and Hope (1972, 1974) and Williams and Collins (1995).

¹¹ We perform such a test including only marital status among the SC variables because in this way the number of observations is greatest and, moreover, regressors are those most typically used in studies concerning labor supply decisions.

¹² Notice that, in every regression which includes the OPS index, the constant term is not significant. This makes the comparison of absolute values of coefficients somewhat less reliable. However, the comparison of the relative values gives similar results.

offered wages, we interpret this result as further evidence that our controls for w are effective.

We now turn to the analysis of the impact of SC variables. Table 2 shows that marital status has a large effect on work hours decisions. From Regression 1, we understand that having been married at least once has a positive and large effect on labor supply. In particular, married people work about 2.4 hours more than never married ones. Moreover, people at their second or subsequent marriage and people experiencing separation or widowhood work about 4 hours per week more than people who have never been married or are currently divorced but not remarried. Furthermore, Regressions 3 and 5 show that marital status has a rather different impact on the decisions of men and women. Married men work almost 8 hours more (almost 9 if at their second or subsequent marriage) than never married ones. Separated, divorced and widowed men work about, respectively, 4.9, 2.3 and 6.2 hours more than never married men. On the contrary, married women work about 1.8 hours less than never married ones and widows work about 2.8 hours less. Quite interestingly, women at their second marriage and women who are currently separated but not remarried work as much as never married ones.

These results are somewhat puzzling if we try to interpret them solely in terms of intrinsic versus extrinsic SC. In fact, more intrinsic SC in the form of first marriage increases the supply of labor (this happens on average and, in particular, for men) and, at the same time, less intrinsic SC in the form of separation, widowhood or further marriages (meaning that the previous ones did not work very well) increases the supply of labor even more. A better explanation is that marriage is not only a matter of relationships but it is also an important economic institution. In the first place, marriage often coincides with a new lifestyle that is accompanied by exceptional expenses, which, in turn, require more income and, hence, more work. In the second place, a marital relationship often entails a form of labor specialization.¹³ So if we suppose that marriage requires, on average, an extra amount of income, which pushes each partner to work a few extra hours per week, and we assume, moreover, that labor specialization induces a reallocation of 5-4 hours of weekly market work from women to men (as suggested by Regression 3 and 5), then the figures of Regressions 1, 3 and 5 tell a coherent story: *ceteris paribus*, more intrinsic SC in the form of marital relationships does, if anything, reduce the supply of labor. Nevertheless, since we cannot support this interpretation with further empirical evidence, we conservatively regard the overall result about the impact of intrinsic SC in the form of marital relationships as ambiguous for what concerns men and as negative for what concerns women.

¹³ Unfortunately, we do not have measures of time spent on child care or housework but we suspect that we would find exactly opposite results with respect to Regressions 3 and 5 – namely that married men do less child care and housework than never married ones and vice versa for women (see Aguiar and Hurst (2006) for detailed data on this).

The second set of regressions – namely 7, 8, 9 and 10 – investigates the impact of intrinsic SC in the form of social contacts. In Regression 7, we have included, alongside the regressors used in Regression 1, four dummy variables, which take value 1 if the subject affirmed to spend at least one evening per month with, respectively, relatives, neighbors or friends living outside the neighborhood and at least one evening per month at a bar or tavern. We interpret the first three variables as positive indicators of intrinsic SC, while we view the latter as a negative one. The idea is that individuals with poorer relational goods tend to spend more time at bars or similar places, trying to compensate for their lack of social contacts.¹⁴ In Regression 8, we add interaction effects between the social contact dummies and the dummy indicating that the subject is currently married. We do this to control for the possibility that marital relationships may be a substitute for social contacts. Regressions 9 and 10 investigate whether men and women are different in this respect. We maintain the same regressors used in 8 but run the regressions on samples that include, respectively, only men and only women.

In Table 3, we report the estimates of the SC variables for this second set of regressions. Results show that having at least a monthly contact with neighbors goes with a reduction of about 3 work hours per week; having contacts with relatives and friends outside the neighborhood does not have any substantial impact on work hours decisions. On the contrary, spending at least one evening per month at a bar goes with almost two 2 additional hours of work per week. The coefficient of the interaction effect between marriage and contacts with neighbors is slightly larger than 1 and significant, suggesting a certain degree of substitutability between the two. Another possible explanation is that the nature of the relationships with neighbors tends to be different for married people. Couples may be more likely to interact with neighbors for instrumental reasons (mutual child caring, neighborhood monitoring, etc.) or to perceive such contacts as an investment in the quality of the environment they have decided to live in. In other words, these relationships may be extrinsic instead of intrinsic and, hence, have a different impact on work hours decisions. The interaction effect between marriage and evenings spent at a bar offers a different picture. The coefficient is rather large (about 1.9) and highly significant. This suggests that married people going to a bar may be an indicator of poor marital relationships or, more in general, of an unpleasant relational environment at home (e.g. the Andy Capp syndrome). Incidentally, this supports our interpretation of spending evenings at a bar as a proxy of poor intrinsic SC. Furthermore, evenings spent with either relatives or friends living outside the neighborhood does

¹⁴ This interpretation is supported by the fact that the correlation between spending an evening at a bar and spending one with friends or neighbors is positive but rather low. If people were to go to bars accompanied by friends or neighbors instead of going alone and in search of company, then we should observe a much larger correlation.

not seem to have much impact on work hour decisions. A possible explanation of this result is that the two variables are not good indicators of intrinsic SC or are spurious ones. However, we have no strong arguments in favor of this interpretation. Again, we adopt a conservative approach and conclude that SC in the form of contacts with relatives or friends living outside the neighborhood does not affect work hours decisions. Finally, Regressions 9 and 10 suggest that there are no substantial differences between men and women.

The third set of regressions – namely 11, 12 and 13 – investigates the impact of intrinsic SC in the form of trust in individuals. Alongside the regressors used in Regressions 1, 3 and 5, we add three dummy variables, which take value 1 if the interviewed subject declared to consider, respectively, most people to be trustworthy, most people to be helpful or most people to act unfairly – i.e. to take advantage of others whenever possible. As for the previous sets of estimations, we run separate regressions for all individuals (regression 11), for men only (regression 12) and for women only (regression 13). The estimates of the relevant parameters are reported in Table 4.

Overall, results suggest that intrinsic SC in some forms of trust in individuals does have an impact, albeit not a large one, on labor supply decisions. When all individuals are considered, the only significant coefficient is that of “unfairness” but it remains small at about -.7. When only men are considered, the coefficient becomes somewhat larger but with no qualitative difference. Instead, when only women are considered, the coefficient of “unfairness” becomes non-significant, while that of “helpfulness” becomes significant and scores about -1.03. In conclusion, although the general picture is one of non remarkable influence of social trust on work hours decisions, we see that there are differences between men and women. Men seem to work somewhat less if they consider other people to behave unfairly, whereas women seem to work less if they consider people to be helpful in most situations. This difference is not very relevant in quantitative terms but it may be an indication that SC affects the male and female labor supply in different ways.

The fourth set of regressions – namely 14, 15, 16 and 17 – investigates the impact of SC in the form of membership in various types of groups and organizations. We consider the result of these estimations our most important test, because group membership allows us to distinguish between intrinsically and extrinsically motivated relational activities, respectively Putnam’s groups and Olson’s groups.

Table 5 reports the estimates of the three variables of interest, i.e. the number of memberships in Putnam’s groups, in Olson’s groups and in Other groups. The results of Regression 14 indicate that membership in an Olson group goes with about 3.6 extra hours of work, while membership in a Putnam group is not associated with a substantial change in hours worked; moreover, membership

in an Other group is associated with about -1.3 hours of work per week. However, these estimates are likely to be unreliable because membership in groups or organizations is clearly endogenous to the choice of labor supply. Participating in many group activities, such as volunteering, hobbies, sports, etc., also depends on the off-work time. Being part of organizations like unions or professional associations is possible, in most cases, only if people work on a regular basis. Furthermore, unobserved personal characteristics, such as a strong desire to be involved in some activity or a sense of duty, may affect both work hours decisions and group membership decisions.

Our strategy in this respect is to perform a IV estimation. The instrumental variables that we use are the yearly average number of memberships in, respectively, Putnam, Olson and Other groups of each US census region. Our fundamental assumption is that yearly average memberships affect labor supply decisions only by affecting the likelihood of being a member of some group. This may be due to peer effects, regional social norms or just a greater selection of available groups and organizations to join. We apply a 2SLS method, where the three instruments are allowed to influence membership in anyone of the three types of groups. In Regression 15, we estimate the impacts of membership for all individuals. Very interestingly, we find that group membership has a dramatic impact on the supply of labor. Membership in a Putnam group decreases weekly work time by about 3 hours, while membership in an Olson group increases weekly work time by about 8.7 hours; membership in an Other group is associated with about -1 hour of weekly work time but the coefficient is not significant. These numbers are definitely large and suggest that SC heavily affects work hours decisions. In particular, there is sharp difference between intrinsic and purely extrinsic SC: the former substantially decreases the supply of labor, while the latter dramatically increases it. As long as our assumptions are satisfied, the three instruments that we use are not weak ones (in the sense of Stock and Yogo (2003)) and, hence, the risk of biases related to instrument weakness is low.¹⁵

In Regressions 16 and 17, we test for differences between men and women. Unfortunately, most coefficients become insignificant, making interpretation less clear. The only significant coefficient is that of Olson's groups for women, which scores about 15.7. The coefficient of Olson's groups for men drops to about .5, being not significant. The coefficient of Putnam's groups remain of the same sign and quite large for both men and women, though not significant. The coefficient of Other groups in women's regression remains negative but becomes sensibly larger than in

¹⁵ The F statistics of our first stage regressions suggest that the three instruments are not weak ones (in the sense of Stock and Yogo (2003)).

regression 15.¹⁶ We interpret these results as evidence that women are more responsive than men to SC. In particular, women seem to be much more responsive than men to the labor-increasing effects of extrinsic SC, whereas the labor-decreasing effect of intrinsic SC is almost the same for men and women.

Our last set of regressions – namely 18, 19, 20, 21 and 22 – investigates the impact of SC using the number of hours spent watching TV per week. We interpret this variable as a proxy for both the quantity and the quality of relational activities, following Bruni and Stanca (2007). Of course, also in this case we face a problem of endogeneity. The time spent watching television certainly depends on work hours and, moreover, there may be unobserved personal traits that affect both. As an attempt to solve the problem, we again perform a IV estimation. We use the self-reported degree of confidence in television as an instrument. The fundamental assumption is that confidence in television affects the supply of labor only by affecting the decision of how many hours of TV are watched.

Results are shown in Table 6. In Regression 18, we run a standard OLS. As expected, the coefficient of watching TV is highly significant but very likely to be downward biased by endogeneity problems. In Regression 19, we run a 2SLS with confidence in television as an instrument. The coefficient of watching TV becomes very small and not significant. This suggests that the only causal relationship between watching TV and the labor supply goes from the latter to the former. However, this outcome may be the result of two opposite effects: a positive effect on people who watch a few hours of television due to intrinsic SC and a negative effect on people who watch TV a lot due to non-relational reasons. Figure 1 illustrates the distribution of TV watchers by the number of hours per day spent watching TV. Median and modal TV watching is 2 hours per day. About 83.4% of the population declares to watching TV not more than 4 hours per day. The percentage increases to 90.13 if we consider those who watch TV not more than 5 hours per day. In Regression 19, we restrict the sample to the latter group of people. Very interestingly, the coefficient now becomes about .25 and significant at the 10% level. In Regression 20, we further restrict the sample to those watching TV not more than 4 hours per day and the coefficient increases to .40 and becomes significant at the 5% level. These results suggest that our intuition about the two offsetting effects may indeed be correct. In Regressions 21 and 22, we explore whether there are differences between men and women. We find that the positive impact of television on labor supply is substantially due to women.

¹⁶ Since the constant term in Regression 17 is not significant, the absolute values of coefficients cannot be compared across regressions. However, looking at relative values we obtain substantially similar results.

5. Conclusion

SC has shown to have different effects depending on its intrinsic or purely extrinsic nature. Women and men seem to be affected in substantially different ways. The main findings of this paper are:

1. more intrinsic SC goes with less hours worked;
2. more purely extrinsic SC goes with more hours worked, but only for women;
3. our IV estimations suggest that a direction of causation goes from social capital to hours worked, though the other direction of causation is not excluded;
4. the impact of SC on hours worked is greater for women than men;
5. women's choice of how much to work is heavily and positively affected by purely extrinsic SC in the form of membership in Olson's groups, while men's is almost unaffected;
6. women's choice of how much to work is partly negatively affected by intrinsic SC in the form of trust in individuals, whereas men's is partly positively affected by it;
7. on balance, intrinsic SC in the form of marital relationships appears to negatively affect work hours decision for both men and women, though the first marriage seems to increase men's labor supply (this may be due to labor specialization in the household);
8. intrinsic SC in the form of social contacts goes with less work hours for both men and women; in particular, evenings spent with neighbors and evenings spent at a bar are consistent with the previous statement while evenings spent with relatives or friends outside the neighborhood have a negligible impact on the work hours;
9. television seems to positively affect the supply of labor, but only for women who do not watch it more than 6 hours per week.

In the light of these findings we can draw two conclusions. First, as far as intrinsic SC is concerned, Bartolini-Bonatti's thesis that a decline in social capital induces individuals to work more cannot be rejected. However, purely extrinsic SC seems to have an opposite effect, though this occurs only for women. Second, Putnam's thesis that the increase in the female participation in the labor market is a cause of the decline in SC in the form of social activities may be inverted. In fact, less extrinsic SC seems to cause women to work less.

Furthermore, our results suggest that the decline of social capital may have played a role in the increase in market hours worked in US. In the light of the evidence provided by Bartolini, Bilancini and Pugno (2007) – who show that the decline in intrinsic social capital is a major determinant of the US decrease in reported well-being – one may advance the hypothesis that the decline of social capital may contribute to solve one of the main puzzles of the happiness literature: why do Americans strive so much for money if money cannot buy happiness? However, before any

conclusion in this regard can be reached, additional research is needed at both the empirical and the theoretical level.

Finally, it is worth noting that our results about SC in the form of group membership are relevant for theories about social capital and growth. SC, in the form of Putnamian and Olsonian groups, has opposite effects on the labor supply which lead respectively to reduction or enhancement of economic growth. Notice that these impacts on growth are opposite to the ones expected, respectively, by Putnam and Olson.

References

- Aguiar, Mark and Erik Hurst, (2006). "[Measuring Trends in Leisure: The Allocation of Time Over Five Decades](#)," [NBER Working Papers](#) 12082, National Bureau of Economic Research, Inc.
- Bartolini S., Bilancini E. and Pugno. M (2007) "Did the decline in social capital depress American happiness? A relational explanation of the happiness paradox", Siena, mimeo
- Bartolini S. and L. Bonatti, (2002) "Environmental and social degradation as the engine of economic growth", *Ecological Economics*, 41, pp. 1-16
- Bartolini S. and L. Bonatti (2003), "Endogenous growth and negative externalities", *Journal of Economics*, 79, pp. 123-144
- Bartolini S. and L. Bonatti, "Endogenous growth, decline in social capital and expansion of market activities", forthcoming on *Journal of Economic Behaviour and Organization*, forthcoming
- Beugelsdijk, Sjoerd, Henri L. F. de Groot, and Anton B. T. M. van Schaik. (2004). "Trust and economic growth: A robustness analysis". *Oxford Economic Papers* 56:118–34.
- Roland Benabou and Jean Tirole, (2003). "[Intrinsic and Extrinsic Motivation](#)," [Review of Economic Studies](#), Blackwell Publishing, vol. 70(3), pages 489-520, 07.
- Beugelsdijk, S., van Schaick, T. (2005), "[Social capital and growth in European regions: an empirical test](#)", *European Journal of Political Economy*, Vol. 21, Issue 2, 301-324.
- Blanchower D. and A. Oswald, (2004) "Well-Being Over Time in Britain and the USA". *Journal of Public Economics*, (88):1359-1386.
- Bruni, Luigino and Stanca, Luca, 2007 "Watching alone. Happiness, Relational goods and television", *Journal of Economic Behaviour and Organization* forthcoming
- Bowles, Samuel, and Yongjin Park (2005) "Emulation, Inequality, and Work Hours: Was Thorsten Veblen Right?" *The Economic Journal* 115 (507), F397–F412.
- Costa D. L., Kahn M. E., (2003), Understanding the decline in social capital,. 1952-1998, *Kyklos*, 56, 17-46.
- Deci, E. L. 1971. "Effects of externally mediated rewards on intrinsic motivation". *Journal of Personality and Social Psychology*, 18: 105-115.
- Durlauf, S. "On the Empirics of Social Capital," *Economic Journal*, 112, 459-479, 2002.
- Durlauf, S. and M. Fafchamps "Social Capital", in *Handbook of Economic Growth*, P. Aghion and S. Durlauf, eds., Amsterdam: North Holland, 2006.
- Easterlin, R.A. (1974). "Does economic growth improve the human lot? Some empirical evidence". In David P.A. & Melvin, W.R. (eds.) *Nations and households in economic growth*. Palo Alto, Ca: Stanford University Press. 98-125.

- Easterlin, R.A., 1995. "Will raising the incomes of all increase the happiness of all?" *Journal of Economic Behavior and Organization* 27, 35–47
- Frey, Bruno S, 1997. "[A Constitution for Knaves Crowds Out Civic Virtues](#)," *Economic Journal*, Royal Economic Society, vol. 107(443), pages 1043-53, July.
- Goldthorpe, John H. and Keith Hope (1972) "Occupational grading and occupational prestige" in *The Analysis of Social Mobility: Methods and approaches* (Keith Hope, editor), Clarendon Press, Oxford.
- Goldthorpe J.H. e Hope K. (1974), *The social grading of occupations: A new approach and scale*, Oxford, Clarendon Press
- Gui B. e R. Sugden (2005), "Economics and Social interactions" Cambridge University Press.
- Helliwell, John F. and R.D. Putnam (2004) 'The social context of well-being' *Phil Trans R. Soc Lon. B* vol. 359, pp. 1435-46. To be reprinted in F.A. Huppert, B. Kaverne and N. Baylis, eds., *The Science of Well-Being*. London: Oxford University Press.
- John F. Helliwell (2006) "Well-Being, Social Capital and Public Policy: What's New?" *The Economic Journal* 116 (510), C34–C45.
- Hirsch, F. (1976). *Social Limits to Growth*. Cambridge, Mass: Harvard University Press.
- Hirschman A.O. (1982), *Shifting Involvements. Private Interest and Public Action*, Princeton
- Knack, Stephen, and Philip Keefer. (1997). "Does social capital have an economic payoff? A crosscountry investigation". *The Quarterly Journal of Economics* 112:1251–88.
- Knack, S.(2003), "Groups, Growth and Trust: Cross-Country Evidence on the Olson and Putnam Hypotheses", *Public Choice*, 117, 341-355
- Kreps, D. M. (1997). Intrinsic motivation and extrinsic incentives. *American Economic Review*, 87(2), 359–364.
- Ladd, E. (1996) 'The Data Just Don't Show Erosion of America's Social Capital' , *Public Perspective* 7: 1-30
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Schleifer, and Robert W. Vishny. (1997). "Trust in large organizations" *American Economic Review* 87:333–38.
- Neumark, D., Postlewaite, A, (1998), "Relative income concerns and the rise in married women's employment", in *Journal of Public Economics*, LXX, pp. 157-183
- Miguel, E., Gertler, P., Levine, D.I. (2002), "[Did Industrialization Destroy Social Capital in Indonesia?](#)", Center for International and Development Economics Research, Working Paper Series No. 1047.
- Olson, M., (1982). *The Rise and Decline of Nations: Economic Growth, Stagflation and Social Rigidities*. Yale UP: New Haven

- Paxton, Pamela (Jul., 1999), "[Is Social Capital Declining in the United States? A Multiple Indicator Assessment](#)", *The American Journal of Sociology*, Vol. 105, No. 1 pp. 88-127
- Polanyi, M (1946). *Science, Faith and Society*. Oxford: Oxford University Press.
- Portes, A., Landolt, P. (1996), "The downside of social capital", *The American Prospect*, 26, 18-21.
- Putnam, R. D. (1993) *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton NJ: Princeton University Press
- Putnam, R.D., (2000). *Bowling Alone. The Collapse and Revival of American Community*. Simon & Schuster: NY
- Robinson RV and EF. Jackson (2001) "Is Trust in Others Declining in America? An Age-Period-Cohort Analysis", *Social Science Research* 30, 117-145
- Sabatini, Fabio (2006), "Social Capital as Social Networks: a New Framework for Measurement", under revision for resubmission to the *Journal of Socio-Economics*.
- Sansone and Harackiewicz, (2000) *Intrinsic and Extrinsic Motivations*. Sand Diego, CA. Academic Press
- Schor, Juliet B. (1991) *The Overworked American: The Unexpected Decline of Leisure*. New York: Basic Books
- Smith TW (1990) "Trends in Voluntary Group Membership: Comments on Baumgartner and Walker", *American Journal of Political Science*, Vol. 34, No. 3., pp. 646-661.
- Stock, J.H. and M. Yogo (2003), "Testing for weak instruments in linear IV regression", *mimeo*, Department of Economics, Harvard University.
- Stolle, D. and Hooghe, M. (2004) "Inaccurate, Exceptional, One-sided or Irrelevant? The Debate About the Alleged Decline of Social Capital and Civic Engagement in Western Societies", *British Journal of Political Science* 35, 149-167
- Stolle, D., and Rochon, T. (1998), "Are All Associations Alike? Member Diversity, Associational Type and the Creation of Social Capital", *American Behavioral Scientist* 42(1), 47-65.
- Uhlener, C. J. (1989) "Relational goods and participation: Incorporating sociability into a theory of rational action", *Public Choice*, 62, pp. 253-285
- Williams, D.R. & Collins, C. (1995). "U.S. socioeconomic and racial differences in health: patterns and explanations". *Annual Review of Sociology*, 21:349-386
- Woolcock, M. (1998), "Social capital and economic development: forward a theoretical synthesis and policy framework", *Theory and society*, 27,151-208.
- Zak, P.J. e Knack, S. (2001), "[Trust and Growth](#)", *The Economic Journal* 111: 295-331.

Table 1. Summary statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Weekly hours of work	46506	23.76119	23.04775	0	98
Female	46510	.5606106	.4963181	0	1
Age	46344	45.26474	17.48464	18	89
Black	46510	.1375833	.3444658	0	1
Other non-white race	46510	.0350677	.183953	0	1
Years of education	46369	12.60765	3.166813	0	20
Non-personal Household Income	36414	349.5479	562.4338	-1049.74	10383.03
% of regional unemployment	38882	.0632316	.018056	.028	.125
Occupational Prestige Score	23353	43.57393	13.70669	17	86
Number of children	46351	1.964316	1.812595	0	8
Household size	46504	2.730346	1.539986	1	16
Married	46502	.555417	.4969248	0	1
2+ marriage	46502	.1054148	.3070905	0	1
Separated	46502	.1161025	.3203513	0	1
Divorced	46502	.0349447	.1836418	0	1
Widowed	46502	.1003398	.3004557	0	1
At least one evening a month with relatives	26923	.5389815	.4984874	0	1
At least one evening a month with neighbors	26892	.364086	.4811819	0	1
At least one evening a month with friends	26905	.4239361	.4941896	0	1
At least one evening a month at bar	26869	.1673304	.3732775	0	1
Generally trusts people (yes or depends)	29496	.393172	.4884627	0	1
Considers people unfair (yes or depends)	29684	.3667969	.4819386	0	1
Considers people helpful (yes or depends)	29782	.4960043	.4999924	0	1
# of Putnam's group memberships	20444	1.185923	1.416396	0	9
# of Olson's group memberships	20536	.3643845	.6024991	0	4
# of other group memberships	19985	.2117088	.459382	0	3
Hours TV per week	27820	20.75014	16.04603	0	168

Table 2. Occupational prestige score as a proxy for earning capability

Total Hours Worked per week	1 - All	2 – All + OPS	3 - Men	4- Men + OPS	5 - Women	6 – Women + OPS
Period	1976-2004	1988-2004	1976-2004	1988-2004	1976-2004	1988-2004
Female	-9.114134*** (39.26)	-7.802919*** (25.96)				
age	1.262055*** (29.69)	1.292498*** (23.03)	1.409884*** (20.93)	1.333276*** (14.98)	1.181551*** (21.90)	1.284178*** (17.99)
Age square	-.0178777*** (43.71)	-.0183104*** (34.47)	-.0209538*** (31.50)	-.0205507*** (23.73)	-.0162109*** (31.76)	-.0170938*** (25.73)
Black	-1.084737*** (3.17)	-.0228118 (0.05)	-2.864966*** (5.32)	-2.270766*** (3.12)	-.2091612 (0.48)	1.012028* (1.75)
Other non-white race	-.167945 (0.28)	.1812292 (0.28)	-1.370471* (1.67)	-.9882883 (1.08)	.6700504 (0.80)	.8512114 (0.92)
Years of education	.2390215 (1.39)	.6058558** (2.38)	.1242466 (0.50)	.3941685 (1.06)	.0917835 (0.38)	.3388387 (0.97)
Years of education square	.034486*** (5.10)	.0034224 (0.35)	.0317387*** (3.31)	.0091285 (0.64)	.0408389*** (4.30)	.0120338 (0.89)
Non-personal Household Income	-.0050676*** (19.02)	-.0047921*** (14.94)	-.0031563*** (7.85)	-.0030156*** (6.20)	-.0042851*** (13.17)	-.0044891*** (11.26)
% of regional unemployment	-67.85861*** (5.13)	-8.23868 (0.27)	-77.36732*** (3.83)	-6.770744 (0.15)	-56.43721*** (3.32)	-10.93652 (0.28)
Occupational Prestige Score		.1435972*** (11.29)		.0863714*** (4.48)		.1814769*** (10.93)
Number of children	-.5585849*** (6.80)	-.8333117*** (7.31)	-.076398 (0.58)	-.359156** (1.97)	-.794993*** (7.73)	-1.076228*** (7.46)
Household size	-.3621438*** (3.59)	-.2638712* (1.91)	.0620791 (0.42)	.0231531 (0.11)	-1.076788*** (7.83)	-.7500596*** (4.02)
Married	2.409046*** (6.66)	2.896909*** (6.13)	7.7846*** (15.00)	8.508256*** (12.51)	-2.752067*** (5.54)	-1.823091*** (2.81)
2+ marriage	1.572784*** (4.06)	2.161731*** (4.33)	1.04422** (1.96)	2.127554*** (3.14)	1.976224*** (3.62)	2.140425*** (3.02)
Separated	4.243043*** (9.69)	4.030278*** (7.39)	4.926391*** (7.01)	5.460315*** (6.27)	2.566674*** (4.62)	2.216513*** (3.20)
Divorced	1.027021 (1.52)	.9914744 (1.11)	2.340428** (2.08)	3.26924** (2.19)	-.4195502 (0.50)	-.7530745 (0.68)
Widowed	3.688089*** (7.26)	4.045424*** (5.97)	6.208252*** (6.25)	8.810589*** (6.44)	-1.340958 (2.16)	-1.5399* (1.87)
constant	12.79761*** (6.98)	2.242574 (0.74)	11.5536*** (3.62)	3.251923 (0.66)	4.41821*** (1.68)	-2.899135 (0.73)
Number of obs	28520	16765	12560	7380	15960	9385
F statistic	467.44	348.75	190.95	148.52	241.23	190.15
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
R-squared	0.3134	0.3129	0.3296	0.3380	0.2710	0.2759
Root MSE	18.44	18.498	18.316	18.396	17.971	18.097

Note: OLS with robust standard errors; all regressions include dummies for years and region of residence.

*significant at 10%

**significant at 5%

***significant at 1%

Table 3. Social contacts and hours worked

Total Hours Worked per week	7 - All	8 - All	9 – Men	10 - Women
Period	1976-2004	1976-2004	1976-2004	1976-2004
Married	2.547385*** (5.37)	2.689489*** (4.00)	8.688444*** (8.31)	-2.500182*** (2.87)
2+ marriage	1.656076*** (3.35)	1.607861*** (3.25)	1.466679** (2.13)	1.703525** (2.48)
Separated	3.889745*** (6.90)	3.779349*** (6.65)	4.941807*** (5.39)	1.926244*** (2.70)
Divorced	1.773516** (2.04)	1.65715* (1.91)	3.341733** (2.24)	.122014 (0.11)
Widowed	4.199085*** (6.41)	4.020911*** (6.02)	7.235495*** (5.63)	-.9658874 (1.20)
At least once a month with relatives	-.1102085 (0.38)	.6100366 (1.46)	-.8185327 (1.15)	.6972051 (1.38)
Married*Relatives		-1.359264** (2.38)	-.4230837 (0.47)	-.8895057 (1.21)
At least once a month with neighbors	-3.157073*** (10.35)	-3.736109*** (8.74)	-3.382521*** (4.69)	-4.047686*** (7.81)
Married*Neighbors		1.197574** (1.98)	1.616975* (1.73)	.8432701 (1.08)
At least once a month with friends	-.3835418 (-1.26)	-.1232304 (0.28)	.2868454 (0.38)	-.2698024 (0.50)
Married*Friends		-.5092612 (0.84)	-1.1583521 (1.22)	-.0685845 (0.09)
At least once a month at bar	1.823964*** (4.46)	1.024166* (1.91)	.280398* (1.70)	3.45302*** (4.66)
Married*Bar		1.97304** (2.45)	-1.487222 (1.40)	1.545203 (1.22)
_constant	14.67153*** (6.05)	14.8906*** (6.10)	14.76318*** (3.97)	7.933637** (2.42)
Number of obs	16759	16759	7334	9425
F statistic	295.66	271.14	109.57	145.72
Prob > F	0.0000	0.0000	0.0000	0.0000
R-squared	0.3259	0.3266	0.3401	0.2883
Root MSE	18.235	18.228	18.256	17.61

Note: OLS with robust standard errors; all regressions include dummies for years and region of residence.

*significant at 10%

**significant at 5%

***significant at 1%

Table 4. Social trust and hours worked

Total Hours Worked per week	11 - All	12 - Men	13- Women
Period	1976-2004	1976-2004	1976-2004
Generally trusts people (yes or depends)	.4917865 (1.54)	.4414095 (0.93)	.5840871 (1.39)
Considers people unfair (yes or depends)	-.7088836** (2.17)	-1.040615** (2.17)	-.589425 (1.36)
Considers people helpful (yes or depends)	-.4344699 (1.36)	.2133152 (0.46)	-1.031776** (2.76)
_constant	14.08718*** (5.41)	12.00447*** (3.32)	9.197112*** (2.76)
Number of obs	16991	7618	9373
F statistic	289.09	121.26	146.08
Prob > F	0.0000	0.0000	0.0000
R-squared	0.3244	0.3407	0.2826
Root MSE	18.244	18.002	17.828

Note: OLS with robust standard errors; all regressions include dummies for years and region of residence.

*significant at 10%

**significant at 5%

***significant at 1%

Table 5. Group membership and hours worked

Total Hours Worked per week	14 - All	15 – All-IV	16 – Men-IV	17 - Women-IV
Period	1976-2004	1976-2004	1976-2004	1976-2004
# of Putnam's groups	-.1977068 (1.45)	-3.054798* (1.64)	-2.514425 (0.90)	-2.94661 (1.21)
# of Olson's groups	3.676876*** (11.74)	8.694598** (2.26)	.5652914 (0.11)	15.74492*** (2.68)
# of Other groups	-1.261827*** (3.33)	-1.01097 (0.19)	.2730073 (0.04)	-3.433596 (0.44)
_constant	11.69614*** (4.23)	8.70938** (2.32)	11.28712** (2.01)	-1.783954 (0.30)
Number of obs	11885	11885	5182	6703
F statistic	216.36	192.62	86.46	83.53
Prob > F	0.0000	0.0000	0.0000	0.0000
R-squared	0.3212	0.2880	0.3085	0.1985
Root MSE	18.313	18.756	18.487	18.725

Note: OLS and 2SLS with robust standard errors; all regressions include dummies for years and region of residence.

*significant at 10%

**significant at 5%

***significant at 1%

Table 6. Hours watching tv and hours worked

Total Hours Worked per week	18 - All	19 – All IV-ConfIV	20 – <36 hours per week, IV	21 – <29 hours per week, IV	21 – Men, <29 hours per week, IV	22 – Women <29 hours per week, IV
Period	1976-2004	1976-2004	1976-2004	1976-2004	1976-2004	1976-2004
Hours tv per week	-.2576945*** (23.29)	.009901 (0.71)	.2452743* (1.76)	.402212** (2.29)	.1892898 (0.76)	.4060213* (1.72)
_constant	21.4019*** (9.55)	12.64518*** (3.75)	10.02177*** (2.72)	7.951733** (2.17)	8.021547 (1.57)	3.037695 (0.59)
Obs	18567	12425	11287	10448	4677	5771
F statistic	350.44	221.26	180.54	156.15	67.61	41.51
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
R-squared	0.3531	0.3207	0.2827	0.2619	0.3101	0.2028
Root MSE	17.884	18.22	18.473	18.647	17.872	18.433

Note: OLS and 2SLS with robust standard errors; all regressions include dummies for years and region of residence.

*significant at 10%
**significant at 5%
***significant at 1%

Figure 1. Distribution of Hours Watching TV per Day

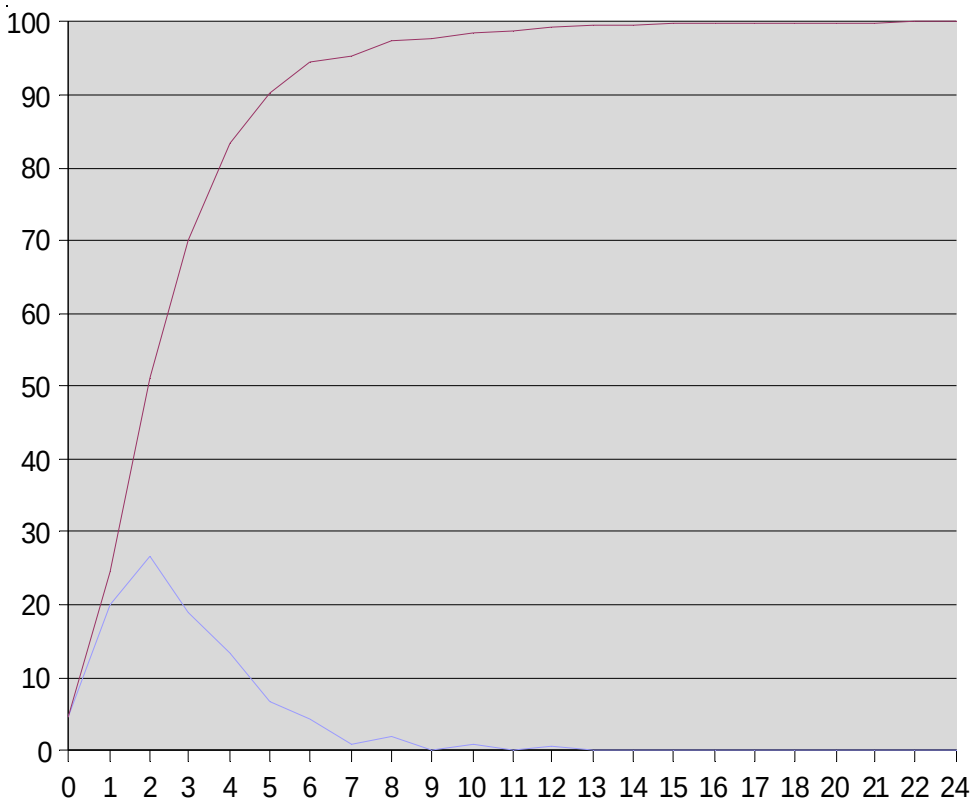
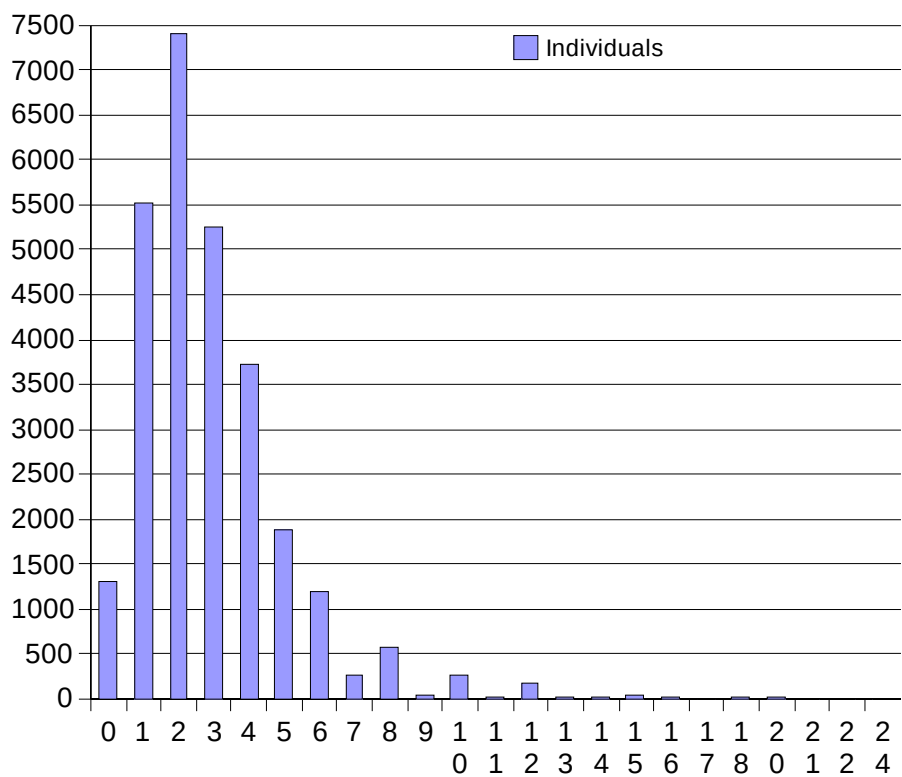


Table 7. Correlations coefficients between SC variables (except marital status ones)

	At least once a month with relatives	At least once a month with neighbors	At least once a month with friends	At least once a month at bar	Generally trusts people	Considers people unfair	Considers people helpful	# of Putnam's groups	# of Olson's groups	# of other groups	Hours TV per week
At least once a month with relatives	1.0000										
At least once a month with neighbors	0.0977	1.0000									
At least once a month with friends	0.0997	0.1385	1.0000								
At least once a month at bar	-0.0050	0.1201	0.2184	1.0000							
Generally trusts people	-0.0389	-0.0117	0.0182	0.0097	1.0000						
Considers people unfair	0.0158	0.0258	0.0073	0.0386	-0.3474	1.0000					
Considers people helpful	-0.0017	-0.0006	-0.0015	-0.0383	0.3364	-0.4290	1.0000				
# of Putnam's groups	0.0275	0.0785	0.0879	-0.0035	0.1571	-0.1309	0.1271	1.0000			
# of Olson's groups	-0.0221	0.0082	0.0641	0.0690	0.1301	-0.0919	0.0902	0.3289	1.0000		
# of other groups	-0.0227	0.0454	0.0364	0.0245	0.0847	-0.0776	0.0512	0.2195	0.1305	1.0000	
Hours tv per week	0.0574	0.0240	-0.0151	-0.0293	-0.1117	0.1230	-0.0730	-0.1568	-0.1649	-0.0440	1.0000

Definition and Source of Variables

The U.S. General Social Survey (dataset 1972-2004)

Female: 1 if subject is female

Age: number of years since born

Age square: age to the power of 2

Black: 1 if respondent defines himself afro-American

Other non-white: 1 if respondent neither defines himself as white nor afro-American

Years of education: number of years the respondent declared to have attended school

Non-Personal Household Income: reported household income minus personally earned income, both as provided in the GSS (variables name: coninc, conrinc)

Occupational Prestige Score: index of earning capability and working status as provided in the GSS (variable name: prestg80)

Household size: number of reported household members

Number of Children: reported number of children

Married: 1 if respondent reports to be currently married

2nd+ Marriage: 1 if respondent reports to be married but not for the first time

Separated: 1 if respondent reports to be currently separated

Divorced: 1 if respondent reports to be currently divorced

Widowed: 1 if respondent reports to be currently widowed

Monthly with relatives: 1 if respondent reports to spend at least one evening per month with relatives

Monthly with neighbors: 1 if respondent reports to spend at least one evening per month with neighbors

Monthly with friends: 1 if respondent reports to spend at least one evening per month with friends living outside her neighborhood

Monthly at bar: 1 if respondent reports to spend at least one evening per month at bar or tavern

Others can be trusted: 1 if respondent considers people to be trustworthy (0 is associated with answers “not trustworthy” and “depends”)

Others are helpful: 1 if respondent considers people to be helpful (0 is associated with answers “not helpful” and “depends”)

Others are unfair: 1 if respondent considers people to be unfair and to take advantage whenever possible (0 is associated with answers “fair” and “depends”)

Putnam's Group: number of memberships of service groups, church organizations, sport clubs, art and literature clubs, national organizations, hobby clubs, fraternal groups and youth associations

Olson's Group: number of memberships of fraternity associations, unions, professional organizations and farm organizations

Other Groups: number of memberships of veteran associations, political party and “other groups”

Description of the typology of groups and organizations:

service groups: non-profit associations aimed at providing a service which is considered insufficiently supplied;

church organizations: associations created by a church for social activities;

sport clubs: non-profit associations supporting sport activities;

art and literature clubs: small associations for studying and spreading art and literature;

national organizations: association based on national/ethnic homogeneity for social activities;

hobby clubs: non-profit associations centered around a single off-work activity;

fraternal groups: non -profit association based on mutual help and a common social purpose;

youth associations: age-based associations for social activities of young people;

fraternity associations: brotherhood pursuing the interest of the members;

unions: labor unions;

professional organizations: association of professionals (not farmers);

farm organizations: association of farmers;

veteran associations: association of ex-member of military forces who have been in a war;

political party: any political group which has an organizational structure (not just political movements);

“other groups”: residual category (not fitting in any of the previous ones).

US Dept. of Commerce, Bureau of Economic Analysis

% regional unemployment: yearly average unemployment in US census regions.