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Did the Decline in Social Capital Decrease American Happiness?

A Relational Explanation of the Happiness Paradox

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Abstract

Most popular explanations of the happiness paradox cannot fully account for the lack of growth in U.S. reported well-being during the last thirty years (Blanchflower and Oswald (2004)). In this paper we test an alternative hypothesis, namely that the decline in U.S. social capital is responsible for what is left unexplained by previous research. We provide three main findings. First, we show that the inclusion of social capital does improve the account of reported happiness. Second, we provide evidence of a decline in social capital indicators for the period 1975-2004, confirming Putnam's claim to a large extent. Finally, we show that failed growth of happiness is mostly due to the decline of social capital and, in particular, to the decline of its relational and intrinsically motivated component.

1. Introduction

This paper provides evidence that the decline of social capital can contribute to explain the happiness paradox. The latter was formulated by Easterlin (1974), who showed two stylized facts: that people in industrialized countries are not becoming happier over time despite economic growth, and that people with a higher income than others, at any given point in time, do report higher levels of happiness. If more income makes an individual better off, why does an increase in the income of all not improve everybody's lot?

Further evidence of the paradox has been provided by subsequent research and it has attracted interest on the determinants of well-being. The literature introduced by Easterlin has become a booming industry by now. This literature is fed by the abundance of data on self-reported well-being, which proved to contain relevant information on the well-being of individuals. Econometric studies have detected, among others, the importance of income aspirations, unemployment, inflation and social capital for people's well-being (Oswald, 1997; Blanchflower and Oswald, 2004; Easterlin, 1995; Frey and Stutzer, 2000; Di Tella and McCulloch).

However, not all these variables, usually omitted from utility functions, can aid in explaining the happiness paradox. In order to do so, they need to have a trend that can offset the positive impact exerted by rising income on well-being. For instance, unemployment and inflation cannot be used to explain the paradox simply because they do not exhibit a rising trend.

Income aspirations have progressively attracted wide consensus due to their potential in explaining the paradox. In fact, the shift in income aspirations may, in principle, compensate for the positive impact of rising income on well-being. Two sources of aspirations dynamics have been pointed out. Aspirations can be linked to one's past income or to the income of one's reference group. The former case has been often referred to as a hedonic adaptation to a consumption standard, while the latter is linked to the tradition emphasizing the importance of social comparisons in determining consumption choices (Veblen, 1899; Duesenberry 1949). In both cases, economic growth tends to raise income aspirations with negative effects on happiness. Growth triggers a Hedonic Treadmill (people adapt their aspirations to past living standards) and a Positional Treadmill (people compare their income to that of others and set their aspirations accordingly), which may partly or completely offset the positive effect exerted on well-being by rising absolute income.

However, the shift in income aspirations cannot fully account for a decreasing trend in happiness. Reasonably, it can account for, at most, a stable trend. In fact, aspirations must concern that which individuals consider relevant per se and not what is regarded as unimportant. In other words, one can aspire to a greater absolute income only if absolute income is considered relevant. If only relative income matters, then it is relative income that becomes the object of aspiration and, hence, adaptation occurs with respect to relative position. Therefore, the total negative effects of the hedonic and the positional treadmills cannot go beyond the elimination of any benefit accruing from income growth.¹ Summing up, a declining trend in happiness remains partly unexplained at the current state of the literature.²

As a remarkable example, Blanchflower and Oswald (2004) observe that a negative time-trend of well-being in the US between 1974 and 1998 persists, even if controlled, for relative

¹ The empirical evidence on these issues is controversial: Blanchflower and Oswald (2004) show that the effect of an increase in the income of others does not completely compensate for the increase in one's own income (also Stutzer (2004), Luttmer (2005)). On the other hand, some research shows that the impact of the income of others is as strong as that of one's own (see Ferrer-I-Carbonell 2005).

² Di Tella and McCulloch (2005) further attempt to give an answer to the happiness paradox by adding to the conventional arguments of the utility function other aggregate variables, like unemployment rate, inflation, average divorce rate, life expectancy, pollution, and crime, and by attempting an estimate of their contribution to reported well-being. However, "introducing omitted variables *worsens* the income-without-happiness paradox" (Di Tella and McCulloch 2005:1, emphasis added), at least for Europe.

income, alongside the other usual socio-economic controls. They thus conclude asking for more research on this point.

Our thesis is that the decline in U.S. social capital can account for what is left unexplained of the happiness trend. In particular, we test the hypothesis that the decline in the quality and quantity of intrinsically motivated relations may have played a major role in the evolution of happiness over the last thirty years. The possible role of social capital in explaining the happiness paradox is still an open question, currently explored by a few pioneering studies (Helliwell (2003, 2006), Helliwell and Putnam (2005). Bruni and Stanca (2006) focus on the relational dimension of social capital. These studies show a positive impact of social capital on happiness. However, since they do not analyze trends of social capital variables, they do not allow drawing any conclusions on their possible role in explaining happiness trends.³

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 Stall 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.

Summing up, in this paper we test a number of interrelated hypotheses: that the various proxies for social capital declined during the recent decades; that these proxies play an important role in an individual's self-reported well-being over the same period; that absolute and relative income maintain significant roles.

These aims require a generous data set. For this purpose we use the US General Social Survey (GSS) since it includes many questions directly linked to social capital, questions on absolute as well as perceived relative income, and as it extends over 32 years drawing from very large samples of the US population. The main limitation of the GSS is that it is not a panel. Consequently, adaptation cannot be properly studied.

Blanchflower and Oswald (2004) have already estimated a happiness equation with a number of demographic and socio-economic controls using GSS data. In the first part of the paper we follow their strategy. The present work may also be seen as an extension and an advancement of Blanchflower and Oswald (2004). We respect to them, we analyze a longer period (up to 2004

³ When the studies concentrate on social capital, the cross-country approach is adopted. This approach not only impedes the analysis over time, but the usual data set employed (the World Value Survey) does not allow the comparison of individuals' level of absolute income.

instead of 1998); we include social capital variables; we refine the controls for relative income; and, most importantly, we calculate the impact of each of our regressors on the trend of happiness.

The paper proceeds as follows. In Section 2, we define concepts and variables. In Section 3, we estimate the impact of social capital on happiness. In Section 4, we estimate the trend of social capital. In Section 5, we estimate the happiness trend predicted by our figures and compare it to the observed trend. Section 6 draws conclusions and comments on both problems of interpretation and implications for policy.

2. Theoretical framework: social capital, relations, motivations

Social capital (SC) is a rather vague concept and, often, scholars ascribe different meanings to it. By SC we mean the stock of non-market relations and beliefs that affect the return of available resources, either in physical or utility terms. In particular, we call the stock of non-market relations *relational social capital* (RSC).

We further distinguish between intrinsically and extrinsically motivated RSC. The concept of extrinsic motivations refers to the incentives coming from outside an individual. By contrast, major psychological schools emphasize the intrinsic motives issuing 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 arisen a lively debate in psychology (Sansone and Harackiewicz, 2000), but it has also attracted interest among the 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. Moreover, they may be both extrinsically and intrinsically motivated. Therefore, we adopt the following definitions which provide a clear and economically meaningful distinction. By *intrinsic relational social capital* (or intrinsic RSC) we mean the stock of RSC that enters into people’s utility functions. By *purely extrinsic* or *non-intrinsic relational social capital* we mean the stock of RSC that does not directly enter into people’s utility functions, but is instrumental to something else that may be considered valuable.

As measures of the non-relational component of SC – i.e. the “beliefs” component – we use several reports of trust in institutions such as organized labor, education, Congress, the military

forces, banks and financial institutions, major corporations, the executive branch of government, etc. This is quite standard (Paxton (2004), Costa and Kahn (2003)). As measures of RSC we use marital status, social contacts, trust in individuals, membership in various groups and organizations, watching TV. We recognize that marital status is not always considered a social capital variable. Nevertheless, it is obviously a relational variable and, hence, we find it reasonable to put it among RSC variables. Moreover, it is an important source of information on the family, which, according to Putnam (2000), is considered the main source of social capital. Furthermore, we classify marital status and social contacts (with neighbors, friends and relatives, at bars and taverns) as indicators of intrinsic RSC. Besides possible extrinsic motivations, their intrinsic nature should be obvious enough. In the following, we illustrate why we also consider membership in certain groups, watching TV and trust in individuals as indicators of intrinsic RSC.

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)). Given the different nature of the various groups and organizations, we propose 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 sharply conflicting perspectives on the impact of private associations on economic performance and social conflict. Olson (1982) emphasized the propensity of associations to act as special interest groups that lobby for preferential policies, imposing disproportionate costs on the rest of society with adverse consequences for economic performance. Labor unions, professional associations, trade associations and other groups lobby government for tariffs, tax breaks, subsidies or competition-inhibiting regulation, which benefit them but at a large cost to society as a whole. Putnam (1993) viewed membership in horizontal associations much more favorably, as a source of generalized trust and social ties conducive to governmental efficiency, trust and economic performance. 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 Putnam’s group is interpreted as intrinsic RSC, while membership in Olson’s group is interpreted as purely extrinsic RSC. 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.). Conversely, 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 RSC 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 in any of the types otherwise described).⁴

We also classify social trust variables – i.e. reports of general perceived trustworthiness, helpfulness and fairness – as indicators of intrinsic RSC. We interpret them 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 RSC. Apart from the time constraint – which reasonably supports our interpretation – we also suppose that individuals spending much time watching TV are, on average, less engaged in 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.

3. Empirical Strategy, Data and Estimation Results

Our core empirical strategy is the same applied by Blanchflower and Oswald (2004) (BO from now on). Using GSS data, we estimate several ordered logit equations, each characterized by a different set of regressors. We introduce a time variable in all these regressions in order to capture the residual trend in happiness that is left unexplained. By comparing the coefficient of the time

⁴ 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, this is not the only reasons for the minor differences between ours and Knack's classification. We (**manca qualcosa**) some further changes because of 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 group – because we believe that membership in a political party is not necessarily a matter of rent-seeking.

variable across regressions, we deduce information about the impact of the different groups of regressors on the trend of reported happiness.

The equations that we estimate are variations of the following general specification:

$$h^* = h(u(\text{Soc-Demo}, \text{Inc}, \text{RelInc}, \text{SC}, \text{Time})) \quad)1)$$

where *Soc-Demo* is a set of controls for socio-demographic characteristics, *Inc* is a set of controls for absolute income, *RelInc* is a set of controls for relative income, *SC* is a set of controls for social capital and *Time* is the time variable. Function $h()$ determines “perceived happiness” and is assumed to be a positive monotone transformation of the function $u()$ which determines “true” utility. Neither utility u nor perceived happiness h^* can be directly observed. However, we do observe reported happiness h according to the following rule: $h = 1$ if $h^* < c_1$, $h = 2$ if $c_1 < h^* < c_2$, $h = 3$ if $c_2 < h^*$, for some threshold values c_1 and c_2 .

Our first set of regressions contains, beside the time variable, only demographic and economic variables. The purpose is twofold. Firstly, we want to establish that which remains to be explained once we have checked for plausible determinants of happiness that cannot be related to SC (either relational or non-relational). Secondly, we are interested in checking what the best control for relative income is. In fact, the one used by Blachflower and Oswald (2004) – the ratio between household per capita income and regional income – performs rather badly, in our opinion. Since our aim is to measure to what extent SC can account for the happiness trend, we want to be reasonably sure that the unexplained residual in the happiness trend is not due to a poor control for relative income.

Table 1 shows the results for this first group of regressions. Some variables are used as they occur in the GSS. Other variables are constructed using variables found in the GSS. For example, our dependent variable is reported happiness, measured in the GSS by the survey question: “Taken all together, how would you say things are these days? Would you say you are very happy, pretty happy or not too happy?”, associating the numbers from 1 to 3 to the three answers. We intend a higher number to mean greater happiness so we associate 3 to “very happy”, 2 to “pretty happy” and 1 to “not too happy”. Several categorical and ordered variables require more than two values. We either collapse all categories into just two or construct a dummy for each category. Two variables come from two other data sets. Details about definition, source and summary statistics of all variables used in these and subsequent estimations can be found in the appendix. A brief description is provided in the text whenever the variable meaning is not immediately clear.

In Regression 1, we control for demographic characteristics such as age, gender and race, and for socio-economic factors such as work status, years of education and absolute income. We also add a dummy for living with both parents at the age of 16 and another dummy for the divorce of one's parents at the same age. These are supposed to be controls for important individual past events which may have affected individuals' preferences and/or future choices. Both variables have significant coefficients that show the expected signs. This suggests that life events such as the divorce or death of one's parents do have permanent negative effects on the reported well-being of individuals.

We use household income instead of personal income, because the former is available for most observations while the latter is not. Moreover we are confident that household income is a better measure of an individual's overall economic condition. Unfortunately, there is no reliable income data for 2004, which forces us to restrict our analysis to 2002. The period covered is 1972-2002. The magnitude and sign of coefficients is in line with other studies in this area and, in particular, with BO (see also Di Tella and MacCulloch (2005), Di Tella et al (2003), Bruni and Stanca (2006), Alesina et al. (2004)).⁵ Net of the income loss, unemployment has a huge negative impact on happiness. Income buys happiness, but at a very high price. Finally, the coefficient of the time variable is $-.019$ and highly significant. This confirms that reported happiness has a residual negative trend in the period 1972-2004 which is not explained by the controls.

In Regression 2, we follow BO adding a control for relative income and a control for differentials in life costs across U.S. census regions. The first control is obtained by calculating the ratio between "per capita" household income (household income divided by household size) and regional per capita income (source: US Dept. of Commerce, Bureau of Economic Analysis). The second control is an index (base is the U.S. average), which measures the difference in house values for single-family detached homes on which at least two mortgages were originated or subsequently purchased or securitized (source: The Office of Federal Housing Enterprise Oversight's, Repeat Sales House Price Index). Our results differ from those provided by BO in two respects. First, the relative income variable has a negative and insignificant coefficient. Second, the control for life cost differentials has a negative and highly significant coefficient. This may be due to the fact that we constructed the latter variable in a way which is different from that followed by BO or to the fact that the time period that we study is different (1975-2002 instead of 1972-1998). However, the coefficient of the time variable is about -0.162 and highly significant, results very similar to those

⁵ The coefficient of household size is positive and significant, while in BO it is negative and significant. Most probably, this difference is due to the fact that here household size is a proxy for marriage. In fact, when marital status is added, the coefficient of household size becomes negative and significant (see Table 3).

obtained by BO. Overall this suggests to us that the control for relative income may be a rather poor one.

In Regressions 3 and 4, we add further controls for relative income. In the GSS, subjects are asked to evaluate the relative standing of their household income. Available answers are “very below the average”, “below the average”, “average”, “above average” and “very above the average”. Although this is a subjective evaluation of relative position, we find it much more informative than the ratio between per capita household income and regional income. Moreover, what is supposed to be relevant for happiness is the *perceived* relative standing, which depends on both objective relative standing and reference group. Clearly, we cannot exclude that a happier individual tends to perceive a higher relative standing. However, this is true for most variables contained in the regression – including absolute income – and, therefore, we do not find particular reasons against the use of a subjective control for relative income.

We add a dummy for each answer, assuming that “average” is the omitted case. As Table 1 shows, results are quite impressive. The coefficients of these dummies have the right sign and are both large and significant. Interestingly, being “very below the average” reduces the probability of reporting a high level of happiness twice as much as being “below the average” and five times as much as being “above the average” increases such a probability. Moreover, significance decreases substantially as we move from “below the average” to “above the average”. This suggests that there is a strong asymmetry in the impact of perceived relative position. Being convinced of lying below the average life standard hurts people much more than the benefits associated to being convinced of lying above the average one.⁶ The coefficient of the time variable increases sensibly, though it remains negative and highly significant. Most importantly, the time coefficient is almost the same in Regressions 3 and 4 – which differ solely for the inclusion of the ratio between per capita household income and regional income. Overall, this suggests that our control for relative income performs rather better than the one used by BO and, hence, in the subsequent regressions we drop the latter in favor of the former.

Finally, Regression 5 differs from Regression 4 only for the specification of absolute income and constitutes our reference point for investigating the impact of social capital variables. We reintroduce household income and household size in place of per capita household income, because the latter specification of absolute income seems to us less reasonable as it imposes a very specific

⁶ Such a result is certainly interesting per se and has important implications. For instance, it suggests that inequality may have an overall negative effect. However, since in this paper we are interested in the role of social capital, we leave these issues for future research.

relationship between household size and personal income.⁷ The coefficient of the time variable is about -.012 and is highly significant. We interpret this result as evidence that demographic and socio-economic characteristics leave unexplained a substantial part of the trend in reported happiness.

The next set of regressions explores the impact of SC variables: marital status and children, social contacts, social trust, watching TV, group membership and confidence in institutions. One serious problem with these variables is that they are not observed for the entire sample of individuals. We have observations for every variable for both 1975 and 2004. This gives us the possibility to look at their variation over a 30-year time span. However, when we consider all these variables together, we end up with less than six thousands observations out of more than thirty-two thousands. What is worst, the questions about group membership had not been asked during the period 1996-2002 (included). This, coupled with the fact that we do not have reliable observations for household income in 2004, forces us to restrict the time frame to 1975-1994 whenever we place absolute income and variables related to group membership in the same regression.

In total, we run seven additional regressions. In each regression from 6 to 11, we add a different group of social capital variables to the regressors used in Regression 5. In Regression 11, we add all groups of social capital variables. We adopt this strategy for two reasons. First, it allows us to extend the time period up to 2002 for most regression, which, in turn, gives us the possibility of investigating whether the results that we obtain for Regression 11 – relative to the period 1975-1994 – can be reasonably extended to the period 1975-2002. Second, by running separate regressions for each group of social capital variables, we obtain information about the impact of each group on the trend of happiness. In fact, we are not only interested in the impact of social capital as a whole. We also want to understand wherein lays the contribution of relational variables, with respect to non-relational variables, to the explanation of the happiness trend.

Table 3 shows the results for Regressions 6-12. Although not reported, all controls present in Regression 5 are maintained here. Regression 6 investigates the impact of marital status and the number of children. As expected, marital status is very important. In particular, being married increases the level of reported happiness as much as being unemployed decreases it. This confirms that marital status has a large impact on an individual's happiness. Interestingly, people in their

⁷ Introducing household per capita income seems to increase the coefficient of the time variable by a value between .005 and .003, while making age and gender not significant. We cannot find an economically meaningful explanation of these results. However, the comparison between the coefficient of the time variable of Regression 3 and Regression 5 confirms the poorness of the ratio between per capita household income and regional per capita income as a control for relative standing.

second marriage are not as happy as people in their first marriage, even without considering the happiness reduction due to a divorce. Separated and divorced people are less happy than unmarried people. Being divorced is as bad as being widowed. Quite surprisingly, children do not seem to have an impact on happiness. This is the case even if we substitute the number of children with a dummy for 1 or 2 children. One reason may be that household size already captures the effect of children. However, when we control for marital status, the coefficient of household size becomes negative and significant (as in BO), suggesting that household size is mostly a control for household expenditures. Another reason may be that the number of children is a too rough variable: what makes parents happy is not the number of children but the relationship they have with them. In any case, evidence has been provided that, when controlling for individual fixed effects, having a child has almost no effect (Clark and Oswald (2002)). Finally, Regression 6 shows that this group of variables has a considerable impact on the happiness trend. Although the coefficient of the time variable remains negative and significant at the 1% level, it drops from about -.012 to about -0.04, suggesting that a consistent part of the decline in happiness in the period 1975-2002 can be explained with a deterioration of marital relationships.

Regression 7 explores the role of social contacts. We introduce four dummies which are set equal to one if the respondent declared to spend at least one evening per month with, respectively, his/her relatives, his/her neighbors, his/her friends (outside the neighborhood) or at a bar, tavern and the like. The result is twofold. On the one hand, the coefficients of the four dummies are all large and significant, suggesting that social contacts matter a great deal for reported happiness. In particular, spending evenings with relatives, neighbors or friends goes with a greater reported happiness, while spending evenings at a bar goes with a lower one. More precisely, spending at least one evening with relatives increases happiness twice as much as spending one evening with friends or neighbors. Spending at least one evening at a bar has a negative effect that is as large as the positive effect of spending evenings with relatives. We believe that this last result is due to the fact that spending evenings at a bar is a proxy for poor social relations. In our opinion, this interpretation especially fits the case of U.S., where going to a bar in search of company – and not already in company – is a standard practice. On the other hand, however, there is no substantial change in the coefficient of the time variable with respect to Regression 5. This suggests that although social contacts are important for reported well-being, they do not contribute much to the explanation of the happiness trend.

Regression 8 also investigates the role of relational activities but does not distinguish between types of relations. The result is quite interesting. The coefficient of watching TV is negative and highly significant. Watching 8 hours of TV per day hurts as much as being below the average

standard of life and two-thirds as much as being unemployed. This is definitely a large impact. However, the coefficient of the time variable only drops from about $-.124$ to -0.107 , remaining highly significant. Therefore, if our interpretation of TV watching is correct, these numbers do suggest that a reduction (in terms of quality or quantity) in relational activities involved in TV watching may contribute to explaining the happiness trend in the period 1975-2002, but only in small part.

Regression 9 explores the impact of social trust. With respect to Regression 5, we add three dummies for the respondent considering, respectively, most people to be trustworthy, most people to be helpful and most people to act unfairly – i.e. taking advantage of others whenever possible. The coefficients of these three variables are all highly significant and their signs are as one would expect. Considering people trustworthy or helpful goes with a higher reported happiness, while considering people unfair goes with a lower reported happiness. The impact of social trust variables on reported happiness is comparable to that of social contact variables, ranging from about one-third to one-sixth of the impact of unemployment. In this case, however, the coefficient of the time variable drops to slightly less than $-.008$, while remaining significant at the 1% level. This definitely makes the decline in social trust a good candidate for explaining the happiness trend.

Regression 10 shows the impact of group membership. As anticipated, this regression only covers the period between 1975 and 1994. We add four dummies for being a member, respectively, of one, two, three and four or more of Putnam's groups. Moreover, we add two dummies for being member of one and two or more of Olson's groups. We also add one dummy variable for membership in at least one group which does not fall in any of the two previous group categories. As anticipated in the previous section, among Putnam's groups we put service groups, church organizations, sports clubs, art and literature clubs, national organizations, hobby clubs, fraternal groups and youth associations. Among Olson's groups we put fraternity associations, unions, professional organizations and farm organizations. The unclassified groups are veterans associations, political parties and "other groups".

Results for Putnam's and Olson's groups differ sharply (being member of other types of groups seems to have no effect on reported happiness). Membership in Putnamian groups goes with higher reported happiness, although the increase seems to be decreasing with the number of groups one belongs to (the difference between being a member of three and being a member of four or more groups is quite small). The four coefficients are highly significant and also quite large: being a member of three Putnamian groups has almost the same effect (and, of course, opposite sign) as being below the average standard of life. On the contrary, being a member of an Olsonian group goes with, if anything, lower reported happiness. Moreover, only the coefficient of the dummy for

being member of two or more groups is significant and it is smaller, in absolute value, than the coefficient of being member of just one of Putnam's groups.

Overall, these numbers suggest that group membership is good for reported happiness only if it involves relational activities that are intrinsically motivated. In contrast, membership in groups that are fundamentally based on extrinsically motivated relations may even be detrimental to reported happiness, especially if one is a member of several groups of this type. Finally, the coefficient of the time variable drops to $-.10$ and remains significant at the 1% level. One may be tempted to conclude, as in the case of watching TV, that the evolution of group membership during the years between 1975 and 2004 may have some role in explaining the happiness trend, but not a very big one. This conclusion, however, may be substantially incorrect. If membership in Olsonian groups declined substantially in the period 1975-2004, then the impact of group membership may be greatly underestimated if one just looks at the change in the coefficient of the time variable. In fact, the effects of a decline in the participation in Olson's groups may have been partly offsetting the effect of a decline in the membership of Putnamian groups. We explore this issue in next section.

Regression 11 investigates the role of non-relational social capital in the form of confidence in institutions. We add a dummy for the respondent's expression of strong confidence in each of the following "institutions": banks/financial institutions, major corporations, organized religion, education, the executive branch of government, organized labor, the press, medicine, TV, the Supreme Court, the scientific community, Congress, the military forces. As shown in Table 3, the coefficients for confidence in TV, the Supreme Court, the scientific community and the military forces are small and not significant. The remaining coefficients are all significant and, with the only exception of the press, are also strictly positive.⁸ Moreover, apart from the coefficient of confidence in major corporations, which is about $.22$, the positive coefficients are all comprised between $.10$ and $.15$. Therefore, being strongly confident in institutions is accompanied, on average, by a substantially higher level of reported happiness. This definitely makes sense: U.S. citizens who believe in the correct functioning and usefulness of U.S. institutions are convinced of living in a better world and, hence, are happier. However, the coefficient of the time variable only drops to about $.011$, even less than for watching TV (Regression 8) and group membership (Regression 10). This suggests that confidence in institutions can explain, at most, only a small part of the happiness trend.

⁸ We do not have an intuitive explanation for the result about confidence in the press. It may be that more confidence in the press goes with some personal trait that is against reporting high happiness, but we do not try to guess what such a trait may be.

Finally, in Regression 12 we include all social capital variables plus the regressors used in Regression 5. Despite the notable reduction in the number of observations and the shortening of the time frame, results are in line with those obtained in the previous six regressions. Marital status variables maintain similar coefficients, although only married and widowed remain significant. The only exception is being divorced, which seems to lose much of its importance. The impact of social contact variables is almost unchanged and the same is true for watching TV. Among the coefficients of social trust variables, only the variable concerning general trust changes. It maintains the same sign but becomes much smaller and not significant. Also the coefficients of the variables concerning group membership are not affected very much by the inclusion of all social capital variables. The only differences from Regression 10 are that the coefficient of being a member of one of Putnam's group becomes very small and insignificant, while and the coefficient of being a member of at least two of Olson's groups becomes relatively more important. Finally, the variables regarding confidence in institutions decrease their relative impact, but only slightly. In particular, the coefficients of the variables relating to confidence in organized religion, the press, medicine and Congress become smaller and not significant, while the remaining maintain their size and significance – and in some cases they slightly increase them.

In conclusion, Regression 12 confirms the findings of Regressions 6-11, suggesting that our estimates are robust to the inclusion of all social capital variables. In other words, the impact on reported happiness of each group of social capital variables is not washed away by the inclusion of all variables, even if this means that the time span drops to from 31 to 20 years. Thus, we can be reasonably confident that the happiness equation estimated for the period 1975-1994 is not far off from the one that we would obtain for the period 1975-2004, if we had enough observations. Furthermore, the coefficient of the time variable jumps to .11 and is significant at the 5% level. This means that the negative residual in the happiness trend is more than offset by the introduction of social capital variables. More precisely, it is reverted to a positive trend. These numbers definitely suggest that the decline in social capital is a candidate explanation of the happiness paradox. However, they also suggest that we may be missing some important *positive* contributor to happiness. This may be an omitted variable with a positive effect on happiness and a negative trend or one with a negative effect on happiness and a positive trend. Putting it in very simple terms, this analysis proposes the decline of social capital as the answer to the question “why did happiness not increase in the last 30 years?” and, at the same time, it poses the new question “why did happiness not decrease more sharply?”.

Given the importance and novelty of these findings, we believe that a further check of their robustness is necessary. Moreover, we are interested in establishing the relative importance of each

group of SC variables in order to understand which type of social capital -- intrinsic RSC, non-intrinsic RSC or non-relational SC – has played a major role in the failed growth of happiness. We try to perform both tasks using the following two-step strategy. First, we calculate the trend of our social capital variables for the period 1975-2004, checking if and to what extent they actually declined. Second, we calculate the predicted change in happiness due to the change in these variables which occurred throughout this 30 years period. Finally, we compare these predicted changes among themselves, with the predicted change due to demographic and socio-economic variables and with the actual change in happiness.

4. The trends of social capital

We investigate the trends of SC variables by regressing them on the time variable. Since the GSS has been carried out with different sampling techniques, we also provide a regression with demographic controls. Furthermore, in a third regression we include dummies for 10-year cohorts in order to test Putnam's hypothesis that the decline in social capital is mainly generational. We use logit or OLS depending on the nature of the dependent variable. On the whole, our analysis suggests that both relational and non-relational SC declined between 1974 and 2002. Moreover, the control for 10-year cohorts suggests that generations played an important role in this decline but that they cannot fully explain it. Results are reported in Table 4. The first column shows the estimated coefficient of the time variable in regressions without demographic controls, the second column shows the coefficient of the time variable in regression with demographic controls and the third shows the coefficient of the time variable in regressions with both demographic and 10-year-cohorts controls.

Marriage shows, both in simple and controlled estimates, a decreasing trend, while separation an increasing one. Widowhood and divorce do not show a significant trend. Unfortunately, the GSS does not report data on cohabitation, which is certainly on the rise, and which would presumably have effects on well-being similar to those exerted by marriage. However, the impact of cohabitation seems to be somewhat more ambiguous and difficult to capture than that of marriage. The status "living as married" in the happiness equation emerges as not significant in the case of the UK (Blanchflower and Oswald 2004), although it appears as significant and positively correlated in the case of a heterogeneous cross-section of countries (Helliwell 2003). Moreover, while in some cases it is possible to track actual cohabitation, it is rather difficult to obtain data on past ones, and, therefore, it is hard to control for partnership breakdowns that may have an important negative effect – especially because cohabitation is found to be more unstable than marriage (Kamp Dush et al. (2003), Brown (2006)).

The fraction of people who report spending more than one evening per month with neighbors shows a significant declining trend, while the same activity with friends shows a significant increasing trend. The fraction of people reporting to spend more than one evening with relatives is stable, while that of people spending at least one evening per month at a bar or a similar place is slightly declining, although the trend disappears when we control for cohorts. These mixed results suggest that contacts have mostly changed in type but did not decrease much in number. This is somewhat in contrast with the evidence obtained from other data sets. For instance, Costa and Kahn (2003) find a significant declining trend for three variables drawn from different data sets: the probability of spending time visiting or at parties (Time Use Studies 1965-1985), the probability of spending time visiting family or friends (NPD Group Time Study 1992-1999), and the probability of entertaining frequently at home among married people and family eating dinner together (DDB Life Style Study 1975-1998).

Trusts in individuals have a negative trend. More precisely, general trust and a perception of helpfulness have a negative trend, while the perception of unfairness has a positive one. The decline in helpfulness seems a generational phenomenon, while the decline of general trust and the increase in perceived unfairness seem not to be one. These results confirm the evidence from other studies using the same data set but different estimation techniques (Brehm and Rahn 1997; Putnam 2000; Smith 1997; Paxton 1999; Robinson and Jackson 2001).

Daily hours spent watching TV seem to be slightly declining over the last 30 years, although if cohorts are considered then no clear trend emerges. In this case, as well, there are other studies that show a different picture, namely that watching television is increasing (Putnam 2000; Costa and Kahn 2001). Looking at Figure 1, our impression is that watching television has been rising up to the early 90s and then declining. One explanation may be that, during the 90s, it has been substituted by other home entertainment options.

The participation in Putnamian groups is significantly declining both in simple and controlled estimates of the trend, at least when participation is in 1 or 2 groups. The participation in Olsonian and Other groups is also declining, again in the case of 1 group. The total number of memberships in groups of any of the three types shows a negative trend. However, once we control for 10-year cohort these trends disappear (apart from the negative trend of participation in 1 of Putnam's groups). Overall, this suggests that there has been a sort of polarization, with people participating in groups getting involved in a greater number of groups, while the fraction of people participating in some group has decreased. Moreover, this seems to be a generational phenomenon, confirming Putnam's thesis. Other studies have investigated this issue, but this is the first one using GSS data up to 2004. Costa and Kahn (2003) show a significant declining trend also for variables drawn from

other data sets, i.e. the probability of spending time in organizational activity (Time Use Studies 1965-1985), the proportion of 25 to 54-year olds volunteering in the past year (Current Population Survey 1974-1989), the volunteer rate (DDB 1975-1998). However, for what concerns the GSS, they used data only up to 1994 and found that a negative trend is mostly due to the decline in church-related membership.

Our results about confidences in organizations suggest that these indicators have a significant negative trend in the period considered, with the interesting exception of confidence in the military forces, which is significantly positive. The inclusion of cohort controls makes estimates insignificant in three cases: confidence in major corporations, confidence in the executive branch of government and confidence in science. Confidence in the Supreme Court does not show a significant trend. These findings are in line with Paxton (2001), though we consider a longer period.

In conclusion, we interpret these results as evidence that SC has declined in the US over the last 30 years. In other words, we confirm Putnam's thesis. However, this decline is not equally distributed among SC indicators: marriage, group membership, trust in individuals and trust in institutions seem to be the most negatively affected. Furthermore, our findings suggest that part of this decline is linked to the disappearance of older generations but that there is also another part that has to be explained in a different way. In this respect, we can only partly confirm Putnam's claim. For instance, trust in individuals and in institutions seems to be declining also (and mostly) for reasons different than a generational turn-over, while a decline in group membership seems to be entirely due to latter. Very interestingly, the decline of marriage and the growing number of separations do not seem to be a generational matter.⁹

5. Impact of the decline in social capital on the happiness trend. How much?

In Section 3, we have shown that SC affects reported happiness. More precisely, our results suggest that non-relational SC and intrinsic RSC have a positive effect, while extrinsic RSC has a negative effect. In Section 4, we have shown that SC has declined, on average, during the period 1975-2004. In particular, marriage, group membership, trust in individuals and trust in institutions all had a negative trend. In this section, we try to quantify how much the decline in SC has affected reported happiness. In other words, we try to find out to what extent the decline in SC can help to explain the happiness paradox. Our empirical strategy is a rather simple one. We run a regression with the variables included in Regression 12 but with a linear specification (applying OLS), which allows a

⁹ Some sociological literature has argued that social capital has not declined in the US, if membership in voluntary organizations and political participation are observed. However, this contrary evidence produced by, e.g., Baumgartner and Walker (1988) and Ladd (1996), has been either contested on methodological grounds (Smith 1990) or it emerges as fragmentary pieces of evidence, as in Ladd (1996).

better and simpler calculation of the effects of changes in independent variables.¹⁰ We also calculate the variations of each independent variable in the period 1975-2004. We use these numbers to predict the variation of happiness implied by the variations of independent variables and then we compare it to the actual variation of reported happiness. In other words, we calculate the predicted variation in happiness $\Delta h = \alpha(X_{2004} - X_{1975})$, where α is the vector of coefficients obtained with OLS and the variables included in Regression 12, X_{2004} and X_{1975} are vectors containing average values of regressors in, respectively, the year 2004 and the year 1975. Finally, we compare the total effect of the different set of variables to check which had the most prominent role.

Detailed results about the impact of each independent variable are reported in Table 5, while in Table 6 we report the effects of different groups of variables and the total effect. The actual variation in average reported happiness between 1975 and 2004 has been about -.0192. This is a rather small change but nevertheless a relevant one. The main question that we ask of the data is: “what would this figure have been if social capital had remained at its 1975 level?” The answer is approximately .0416, a positive and relatively large increase (about 2% happier instead of about 1% less happy). In our opinion, this definitely confirms that SC can help to explain the lack of growth in happiness.¹¹

However, we are also interested in understanding what part of SC has played a major role and what differences there are between intrinsic and extrinsic RSC. If intrinsic RSC remained at its 1975 level, then the predicted variation would have been about .0336 (obtained by subtracting the total impact of intrinsic RSC from the predicted variation in happiness). Roughly two thirds of the impact of intrinsic RSC on the happiness trend derives from marital status (-.0322). One third of the impact is provided by other forms of intrinsic RSC (-.0160). Among the latter, trust in individuals and membership in Putnam’s groups played a major role, while social contacts seem to have had a negligible impact. The decline of extrinsic RSC, in the form of membership in Olson’s groups, slightly counteracted the effect of the decline of intrinsic RSC, raising happiness by about .0031. Non-relational SC, in the form of trust in institutions, seems to have played a non-negligible role, depressing reported happiness by about .0025. However, it is definitely marginal with respect to the impact of intrinsic RSC.

¹⁰ This does not pose any particular problem since evidence is very strong that estimations of happiness equations using OLS are equivalent, for all practical purposes, to ordered logit and ordered probit (Ferrer-i-Carbonell and Frijters (2004)).

¹¹ One may think that a few percentage points of change in 30 years are not very relevant. Although this is not much emphasized, most of the literature on happiness finds an extremely low variability in average reported happiness (especially that which uses measures in a 3-step scale). Therefore, even a few percentage points should be considered as non-negligible. Moreover, since reported happiness is not well-being but *reported* well-being, a few percentage points of change may correspond to large differences in well-being.

Our figures also confirm that income matters a great deal. Absolute income is the main positive contributor to the happiness trend, with a total impact of about .0492. Notice that this is net of relative income concerns. Moreover, this number certainly is an underestimation because we lack observations on income for the year 2004 (we have to stop at 2002). Relative income had a negative impact due to the increase in perceived economic differences. In fact, an increasing number of people perceived their income to be either above or below the average family income. Unfortunately, given the nature of our controls for relative income, we cannot quantify how much the rise in the income of others negatively impacted on happiness. Other socio-economic factors had a non-negligible negative effect, which is mostly due to the reduction of people staying at home and keeping house (slightly compensated by the rise of retired individuals). Finally, demographics had a non-negligible negative impact, which is almost totally due to the dynamics of average age.

Finally, notice that our estimates have a high predictive power of the happiness trend (-.0147 predicted, -.0192 observed), implying a predicted variation of happiness that departs from the actual value of only .0045. Unfortunately, though we explain much of the variance over time, we are able to explain only a very small fraction of the cross-sectional variance. Most probably, this is due to fact that we are unable to control for unobserved individual characteristics. In any case, apart from major social or cultural changes, we believe that unobserved individual characteristics are unlikely to exert any large influence on the happiness trend (which can explain our good result concerning the trend).

Summing up, the trend of SC seems to have mattered a great deal for the happiness trend. In particular, it seems that this is the case because of the decline of intrinsic RSC. Therefore, our analysis suggests that there are good reasons to believe that intrinsic RSC is the first responsible for the US decline in happiness in the last 30 years. Although other relevant variables are likely to be missing (e.g. adaptation), the difference between the predicted variation and the actual variation in happiness is small enough to leave a limited role to other explanations. Of course, this residual may hide a different story. In particular, it may be underestimated because of biases due to the lack of controls for cohabitation or because of the underestimation of the impact of income (either because we lack data for 2004 or because the measure provided by the GSS is too biased).

6. Summary of Conclusions, Problems of Interpretations and Implications for Policy

Summing up, our findings are the following:

1. including social capital indicators in the empirical model developed by Blanchflower and Oswald (2004) sensibly improves the account of the trend in US reported happiness;

2. the intrinsically motivated part of relational social capital goes with a greater reported happiness;
3. the extrinsically motivated part of relational social capital goes with a smaller reported happiness;
4. non-relational social capital, such as trust in institutions, goes with a greater reported happiness;
5. with the only exception of confidence in the military forces, the trend of social capital indicators that we have studied suggests that social capital declined between 1975 and 2004;
6. the decline of social capital seems to be linked to the disappearance of older generations (Putnam (2000)), but this does not exhaust the issue; in particular, while group membership seems to have declined exactly for the former reason, the decline of marriage and trust in individuals seems to have other causes;
7. if social capital had remained at its 1975 level, our estimates predict that happiness would have increased and not decreased, as it actually did; this suggests that the so called “happiness paradox” may find an explanation if social capital is also taken into account;
8. absolute income seems to be the main positive contributor to happiness, even once we control for perceived relative standing;
9. intrinsic relational social capital seems to be the main negative contributor to happiness; in particular, the decline of marriage (strong relational ties) roughly counts for two thirds of the negative impact, while one third comes from the decline in trust in individuals and group membership (weak relational ties);
10. the predicted positive impact of absolute income is more than offset by the predicted negative impact of intrinsic relational social capital.
11. the difference between the variation predicted by our figures and the actual variation in happiness is very small

The main problem in the interpretation of the evidence that we provided is about causal relationships. The underlying assumption of our empirical strategy is that reported happiness is the result, and not the cause, of the variables that we included in our set of regressors. Of course, we cannot prove this. Nor we can provide any definitive argument that reported happiness is not causing any of our supposedly independent variables. In principle, there are many ways in which being happier affects income, relations, trust in institutions, etc. For instance, it is now common wisdom among medical scientists that happier people have more efficient immune system or that they are less likely to suffer from high cholesterol concentration or high blood pressure.

Unfortunately, at this level of analysis, we cannot use other arguments to support our thesis than the reasonableness of our assumptions. Because of the very subjective nature of reported happiness, we definitely lack credible instrumental variables for most regressors. Moreover, since the endogeneity problem may affect any of our regressors, in order to carry out a fourth estimation, we would require many instruments that, in turn, would require a long list of additional assumptions about their relationships with both regressors and happiness. We remain skeptical about the usefulness of such an estimation because it would be subject to a high risk of bias due to false assumptions about instruments. More defensively, we adopt Blanchflower and Oswald's pragmatic approach: "at this point in the history of economic research it is necessary to document patterns and to be circumspect about causality" (Blanchflower and Oswald (2004), pg. 1380). Being circumspect means not taking for granted what is suggested by our estimation, but considering it, nevertheless, as a piece of evidence.

Finally, we want to briefly comment on what the policy implications are, if our findings are to be taken seriously. The straightforward implication of our results is that the impact on SC of *any* public policy should be considered when taking decisions. This applies to a vast array of issues such as labor market regulations, education, policies for infancy and adolescence, care of the elderly, health care, urban policies, environmental policies, etc. However, there is one issue which deserves particular attention by economists. We can summarize it by answering the question posed in the famous title of Easterlin's paper "Does economic growth improve the human lot?" (Easterlin (1974)). In the light of our results, the answer is a *conditional yes*. In fact, our figures suggest that absolute income buys happiness and that it does this beyond positional concerns. Therefore, in principle, income growth is good for well-being. Income growth, however, is desirable as far as it is not associated with a deterioration of SC. In particular, the positive effects of income growth may be lost (or even more than offset, as in the US case) if growth is accompanied by the growth of extrinsic RSC or the impoverishment of intrinsic RSC or other non-relational SC (such as confidence in institutions). Therefore, in order to judge the desirability of growth, we have to take

into account its effects on SC. In conclusion, the happiness paradox may not be the result of the fact that “money can’t buy happiness”, but may be due to the loss in terms of SC that accompanied economic growth.

Table 1. Ordered Logit Regression, happiness and relative income

	1. 1972-2002	2. 1975-2002	3. 1975-2002	4. 1975-2002	5. 1975-2002
Female	.0747241*** (3.36)	.0113064 (0.48)	.0294293 (1.23)	.0298298 (1.24)	.0563859** (2.34)
Age	-.0189944*** (5.06)	-.0066548* (1.67)	-.0032651 (0.81)	-.0032874 (0.81)	-.0166102*** (4.03)
Age square	.0002628*** (6.57)	.0000915* (2.19)	.000067 (1.58)	.000067 (1.58)	.0002371*** (5.41)
Black	-.4801454*** (14.53)	-.496009*** (13.92)	-.4644708*** (13.02)	-.4664015*** (13.10)	-.4412243*** (12.32)
Other non-white	-.1253531** (2.01)	-.097917 (1.50)	-.0926304 (1.41)	-.0930578 (1.42)	-.110425* (1.68)
Years of education	.0226497*** (5.63)	.0354578*** (8.08)	.0292545*** (6.53)	.0290759*** (6.49)	.0246014*** (5.50)
Retired	.1274525*** (2.77)	.0893249* (1.79)	.0981127* (1.94)	.0988726** (1.96)	.1208461** (2.39)
Unemployed	-.7764868*** (11.33)	-.883336*** (11.98)	-.7508626*** (10.21)	-.7520457*** (10.23)	-.7143622*** (9.65)
Keeping house	.1202834*** (3.72)	.1390803*** (3.88)	.1353341*** (3.76)	.1339606*** (3.72)	.119742*** (3.32)
Student	.1341999** (2.03)	.0815238 (1.15)	.1016211 (1.43)	.097783 (1.38)	.16085** (2.22)
Other	-.4658172*** (4.74)	-.6227398*** (5.96)	-.4611463*** (4.46)	-.4623096*** (4.48)	-.3642011*** (3.56)
Parents divorced or separated	-.1090997*** (2.68)	-.1230674*** (2.83)	-.0985931** (2.26)	-.0991429** (0.023)	-.0941874** (2.15)
Living with own parents at 16	.0943295*** (3.13)	.1167276*** (3.55)	.1118929*** (3.38)	.1119051*** (3.38)	.0923122*** (2.78)
Ln household income/1000					.2210991*** (13.43)
Household Size	.0476364*** (6.20)				.066523*** (7.84)
Ln household per capita inc./1000		.2198727*** (10.15)	.0853934*** (3.81)	.0715257*** (4.74)	
% Diff. Regional price index		-.271039*** (4.38)	-.3071625*** (4.93)	-.3006151*** (4.86)	-.3540348*** (5.71)
Personal/regional		-.0139962 (1.19)	-.0107315 (0.87)		
Income very below average			-.9955188*** (16.35)	-1.001388*** (16.59)	-.8596578*** (14.27)
Income below average			-.5373882*** (18.25)	-.5387744*** (18.33)	-.4549791*** (15.31)
Income above average			.1900226*** (6.07)	.1845482*** (5.99)	.1095128*** (3.51)
Income very above average			.1609059* (1.83)	.1459914* (1.69)	.071117 (0.83)
Time	-.0190505*** (13.81)	-.0162215*** (8.93)	-.0086434*** (4.65)	-.0078757*** (4.89)	-.0123591*** (7.63)
Cut 1	-.8990779	.1278454	-1.190789	-1.300776	-1.323761
Cut 2	1.996996	3.024628	1.759509	1.649367	1.649868
Obs	37910	32349	32153	32153	32153
loglikelihood	-34598.372	-29613.504	-29090.98	-29091.407	-28931.034
Wald Chi2	1905.57	1204.49	1831.80	1831.45	2100.99
Prob > Chi2	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.0308	0.0227	0.0341	0.0341	0.0394

Note: Estimation with robust standard errors (in parenthesis)

Table 2. Summary statistics of variables

Variable	Obs	Mean	Standard Dev.	Min Value	Max Value
Happiness	43317	2.199483	.6337112	1	3
Female	46510	.5606106	.4963181	0	1
Age	46344	45.26474	17.48464	18	89
Black	46510	.1375833	.3444658	0	1
Other non-white	46510	.0350677	.183953	0	1
Years of education	46369	12.60765	3.166813	0	20
Retired	46506	.1271879	.3331869	0	1
Unemployed	46506	.0301466	.1709926	0	1
Keeping house	46506	.1767299	.381444	0	1
Student	46506	.0299101	.1703412	0	1
Other	46506	.0171591	.1298653	0	1
Parents divorced or separated	46485	.1177799	.3223508	0	1
Living with own parents at 16	46485	.7249866	.4465259	0	1
Ln household income/1000	39540	3.636754	1.069562	0	6.083747
Ln household per capita inc./1000	39538	9.684456	1.121593	4.60517	12.9915
Household size	46504	2.730346	1.539986	1	16
Number of Children	46351	1.964316	1.812595	0	8
% Diff. Regional price index	40372	.0116351	.1855122	-.4092308	.8303686
Personal/regional	39538	1.646384	1.625489	.004891	21.69769
Income very below average	43183	.0521502	.2223323	0	1
Income below average	43183	.2355325	.4243361	0	1
Income above average	43183	.184656	.3880227	0	1
Income very above average	43183	.0195679	.1385115	0	1
Married	46502	.555417	.4969248	0	1
2nd+ Marriage	46502	.1054148	.3070905	0	1
Separated	46502	.1161025	.3203513	0	1
Divorced	46502	.0349447	.1836418	0	1
Widowed	46502	.1003398	.3004557	0	1
Monthly with relatives	26923	.5389815	.4984874	0	1
Monthly with neighbors	26892	.364086	.4811819	0	1
Monthly with friends	26905	.4239361	.4941896	0	1
Monthly at bar	26869	.1673304	.3732775	0	1
Others can be trusted	29496	.393172	.4884627	0	1
Others are helpful	29782	.4960043	.4999924	0	1
Others are unfair	29684	.3667969	.4819386	0	1
Member of 1 Putnam's Group	20444	.2765114	.4472836	0	1
Member of 2 Putnam's Groups	20444	.1510468	.3581032	0	1
Member of 3 Putnam's Groups	20444	.0806594	.2723179	0	1
Member of 4+ Putnam's Groups	20444	.0770397	.266661	0	1
Member of 1 Olson's Group	20536	.2539443	.4352767	0	1
Member of 2+ Olson's Groups	20536	.0519088	.2218484	0	1
Member of 1+ other Groups	19985	.1909432	.3930542	0	1
Hours watching tv per day	27820	2.964306	2.29229	0	24
Very confident in banks	29053	.2704712	.4442109	0	1
Very confident in companies	31264	.2564611	.4366863	0	1
Very confident in organized religion	31492	.2966785	.4568008	0	1
Very confident in education	32201	.3117916	.4632324	0	1
Very confident in executive	31711	.1728422	.3781168	0	1
Very confident in organized labor	30766	.1227004	.3280983	0	1
Very confident in press	31961	.1734614	.3786516	0	1
Very confident in medicine	32290	.4822236	.4996916	0	1
Very confident in television	32162	.1416268	.3486723	0	1
Very confident in supreme court	31231	.3290321	.4698692	0	1
Very confident in scientific	30010	.4317894	.4953337	0	1
Very confident in congress	31696	.1373044	.3441738	0	1
Very confident in military forces	31671	.3752329	.4841906	0	1

Table 3. Ordered Logit Regression, Happiness and Social Capital

	6. 1975-2002	7. 1975-2002	8. 1975-2002	9. 1976-2002	10. 1975-1994	11. 1975-2002	12. 1975-1994
Married	.6746414*** (18.24)					.6959921*** (7.30)	
2nd+ Marriage	-.0797213**					.0818254	

	(2.07)					(0.89)
Separated	-.1762623*** (3.99)					-.2024829 (1.64)
Divorced	-.3792365*** (5.31)					-.0606763 (0.32)
Widowed	-.3295549*** (5.67)					-.3965252*** (2.37)
Number of Children	.0110415 (1.28)					.02016 (0.89)
Monthly with relatives		.2321711*** (8.17)				.1447402** (2.56)
Monthly with neighbors		.1262863*** (4.26)				.14161** (2.40)
Monthly with friends		.1107262*** (3.71)				.1522999*** (2.61)
Monthly at bar		-.2300772*** (6.05)				-.200949*** (2.65)
Hours watching TV			-.0548215*** (7.99)			-.0742846*** (4.65)
Others can be trusted				.1520262*** (4.89)		.0414533 (0.67)
Others are helpful				.2801727*** (9.09)		.2140502*** (3.29)
Others are unfair				-.2710613*** (8.12)		-.1837664*** (2.58)
Member of 1 P-Group				.1849807*** (4.44)		.0280198 (0.38)
Member of 2 P-Groups				.2650689*** (5.28)		.2112474** (2.54)
Member of 3 P-Groups				.343729*** (5.42)		.2884388*** (2.89)
Member of 4+ P-Groups				.3792164*** (5.59)		.3258464*** (3.11)
Member of 1 O-Group				-.0214333 (0.53)		.0356015 (0.53)
Member of 2+ O-Groups				-.1540064** (2.06)		-.2309979** (2.02)
Member of other Groups				-.0081094 (0.19)		-.0622346 (0.90)
Very confident in banks					.1204857*** (3.42)	.2592246*** (3.56)
Very confident in companies					.2235814*** (6.46)	.3040021*** (4.31)
Very confident in organized relig.					.1276652*** (3.77)	.066541 (0.98)
Very confident in education					.1330791*** (3.92)	.2407746*** (3.63)
Very confident in executive					.1467188*** (3.46)	.1953302** (2.31)
Very confident in organized labor					.083708* (1.68)	.1822264* (1.75)
Very confident in press					-.1302652*** (3.18)	-.0482809 (0.63)
Very confident in medicine					.1082198*** (3.52)	.0082096 (0.13)
Very confident in television					.0333411 (0.72)	.0744808 (0.85)
Very confident in supreme court					.0466049 (1.40)	-.0032072 (0.05)

Very confident in scientific						-.0267325 (0.85)	-.0149271 (0.24)
Very confident in congress						.109209** (2.23)	.0271064 (0.29)
Very confident in military forces						.0515223 (1.58)	.0443092 (0.68)
Time	-.0045145*** (2.73)	-.0124251*** (6.20)	-.0106861*** (5.62)	-.0079171*** (3.92)	-.0100816*** (3.06)	-.0112245*** (5.51)	.0111213** (2.07)
Cut 1	-1.922611	-1.076352	-1.532347	-1.853618	-1.511124	-1.167868	-2.413583
Cut 2	1.121085	1.978934	1.485625	1.132802	1.422251	1.843665	.8305286
Obs	32083	20794	23050	21107	14362	20741	5532
Loglikelihood	-28408.304	-18457.916	-20594.573	-18881.001	-12970.625	-18451.111	-4690.2051
Wald Chi2	2988.72	1391.45	1494.61	1703.08	936.09	1648.00	653.81
Prob > Chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.0549	0.0409	0.0395	0.0482	0.0393	0.0481	0.0743

Note: Estimation with robust standard errors (in parenthesis)

Table 4. Social Capital Trends

Probit(OLS) Variable	I. Trends		II. Controls		III. Controls + cohorts		Time Period	Obs
	Time Coefficient	Standard Error	Time Coefficient	Standard Error	Time Coefficient	Standard Error		
Married	-.0299363***	30.74	-.0352385***	33.50	-.0360682***	9.92	'72-'04	46502
Separated	.0377813***	25.59	.3300767***	10.83	.015344***	3.44	'72-'04	46502
Divorced	.0029935	1.17	-.0005805	0.22	-.0117655	1.27	'72-'04	46502
At least monthly with relatives	-.0014439	1.05	-.0012393	0.88	.0004335	0.10	'74-'04	26923
At least monthly with neighbors	-.0147846***	10.21	-.0137078***	9.27	-.0150468***	3.19	'74-'04	26892
At least monthly with friends	.0060217***	4.31	.0092548***	6.31	.0099264**	2.11	'74-'04	26905
At least monthly at bar	-.0088071***	4.73	-.0052513***	2.67	-.0046908	0.74	'74-'04	26869
General trust	-.0148809***	11.76	-.0141656***	10.84	-.0092464**	2.06	'74-'04	29496
People unfair	.009879***	7.64	.0098812***	7.29	.0093629**	2.05	'74-'04	29684
People helpful	-.005639***	4.54	-.0052227***	4.07	-.002344	0.54	'74-'04	29782
Hours watching TV (OLS)	-.0032083*	1.93	-.0036406**	2.23	-.0001183	0.02	'74-'04	27820
Member of 1 Puntnam's Group	-.0077458***	3.88	-.0091539***	4.49	-.0119141**	2.03	'74-'04	20444
Member of 2 Puntnam's Groups	-.006101**	2.42	-.0054213**	2.14	-.0055202	0.77	'74-'04	20444
Member of 3 Puntnam's Groups	.0005229	0.16	.0021976	0.68	-.0036234	0.38	'74-'04	20444
Member of 4+ Puntnam's Groups	.0030414	0.89	.0033134	0.97	.0077856	0.78	'74-'94	20444
#Puntnam's Groups(OSL)	-.0026733**	2.09	-.0022001*	1.71	-.0030044	0.81	'74-'04	20444
Member of 1 Olson's Group	-.0074154***	3.62	-.0068865***	3.28	.0019586	0.32	'74-'04	20444
Member of 2+ Olson's Groups	.0043654	1.13	.0061606	1.59	.0011249	0.10	'74-'04	20444
#Olson's Groups(OSL)	-.0010361**	1.97	-.0006273	1.20	.0005817	0.38	'74-'04	20444
Member of other Groups	-.004136**	1.85	-.0035254	1.55	.0047848	0.71	'74-'04	20444
#other Groups (OSL)	-.0009175**	2.32	-.0008759**	2.20	.0005297	0.45	'74-'04	20444
Very confident in banks	-.0243909***	14.67	-.0250674***	14.75	-.0256894***	5.14	'75-'04	29053
Very confident in companies	-.0060181***	4.22	-.0058606***	4.05	-.006238	1.30	'75-'04	31264
Very confident in organized religion	-.0227844***	16.27	-.0238471***	16.64	-.024187***	5.24	'75-'04	31492
Very confident in education	-.0237482***	17.42	-.0257481***	18.42	-.0276271***	6.14	'75-'04	32201

Very confident in executive	-.0068542***	4.10	-.0077339***	4.56	.0034781	0.63	'75-'04	31711
Very confident in organized labor	-.009248***	4.58	-.0097953***	4.72	-.0080532	1.25	'75-'04	30766
Very confident in press	-.0447282***	25.88	-.0457263***	25.99	-.047839***	8.68	'75-'04	31961
Very confident in medicine	-.019897***	16.11	-.0192119***	15.33	-.0138134***	3.35	'75-'04	32290
Very confident in television	-.0300173***	16.26	-.0317508***	16.68	-.0316482***	5.34	'75-'04	32162
Very confident in supreme court	.0002232	0.17	.0006384	0.47	-.001413	0.32	'75-'04	31231
Very confident in science	-.003356***	2.61	-.0022105*	1.68	-.0016486	0.38	'75-'04	30010
Very confident in congress	-.0195107***	10.42	-.0208569***	10.92	-.0192758***	3.18	'75-'04	31696
Very confident in military forces	.0159521***	12.31	.0155258***	11.78	.0206457***	4.79	'75-'04	31671

Controls: 10-years age cohort, gender, age, age squared, black race, other non-white race,
Note: Robust Standard Errors, *significant at 10%, **significant at 5%, ***significant at 1%

Table 5. Predicted Impacts on Reported Happiness

	Coefficient	Mean 1975	Mean 2004	Var 1975-2004	Var. Happiness
Female	0.0113	0.55	0.54	-0.0055	-0.0001
Age	-0.0139	44.31	45.96	1.6569	-0.0230
Age square	0.0001	2275.16	2395.01	119.8560	0.0171
Black	-0.0650	0.11	0.13	0.0247	-0.0016
Other non-white	0.0191	0.00	0.07	0.0688	0.0013
% Diff, Regional price index	-0.0770	0.02	0.00	-0.0195	0.0015
Ln household income/1000	0.0281	2.95	4.24	1.2831	0.0361
Household size	-0.0163	3.17	2.45	-0.7161	0.0116
Years of education	-0.0007	11.68	13.70	2.0156	-0.0013
Retired	0.0549	0.11	0.14	0.0326	0.0018
Unemployed	-0.1515	0.04	0.04	-0.0057	0.0009
Keeping house	0.0569	0.27	0.09	-0.1752	-0.0100
Student	0.0770	0.03	0.04	0.0080	0.0006
Other	-0.0498	0.01	0.02	0.0086	-0.0004
Parents divorced or separated	-0.0110	0.09	0.17	0.0763	-0.0008
Living with own parents at 16	-0.0017	0.77	0.70	-0.0653	0.0001
Income very below average	-0.1860	0.04	0.05	0.0083	-0.0015
Income below average	-0.1124	0.24	0.24	0.0073	-0.0008
Income above average	0.0220	0.18	0.21	0.0249	0.0005
Income very above average	0.0259	0.01	0.03	0.0151	0.0004
Married	0.1913	0.67	0.53	-0.1465	-0.0280
2nd+ Marriage	0.0271	0.11	0.13	0.0205	0.0006
Separated	-0.0592	0.06	0.15	0.0912	-0.0054
Divorced	-0.0195	0.03	0.03	0.0009	0.0000
Number of Children	0.0064	2.11	1.82	-0.2898	-0.0019
Widowed	-0.1057	0.10	0.07	-0.0241	0.0025
Monthly with relatives	0.0434	0.56	0.58	0.0234	0.0010
Monthly with neighbors	0.0404	0.42	0.34	-0.0783	-0.0032
Monthly with friends	0.0402	0.39	0.41	0.0236	0.0010
Monthly at bar	-0.0590	0.16	0.15	-0.0127	0.0007
Hours watching TV	0.0113	3.05	2.87	-0.1818	-0.0021
Others can be trusted	0.0634	0.40	0.36	-0.0363	-0.0023
Others are helpful	0.0109	0.56	0.50	-0.0631	-0.0007
Others are unfair	-0.0534	0.31	0.40	0.0908	-0.0048
Member of 1 P-Group	0.0637	0.30	0.24	-0.0589	-0.0038
Member of 2 P-Groups	0.0858	0.15	0.13	-0.0213	-0.0018
Member of 3 P-Groups	0.0974	0.08	0.08	-0.0014	-0.0001
Member of 4+ P-Groups	0.0094	0.08	0.08	0.0082	0.0001
Member of 1 O-Group	-0.0582	0.27	0.21	-0.0561	0.0033
Member of 2+ O-Groups	-0.0132	0.04	0.05	0.0118	-0.0002
Member of other Groups	-0.0198	0.18	0.15	-0.0319	0.0006
Very confident in banks	0.0726	0.33	0.28	-0.0472	-0.0034
Very confident in companies	0.0898	0.20	0.17	-0.0340	-0.0031
Very confident in organized relig,	0.0170	0.26	0.24	-0.0198	-0.0003
Very confident in education	0.0726	0.31	0.27	-0.0400	-0.0029
Very confident in executive	0.0508	0.14	0.21	0.0711	0.0036
Very confident in organized labor	0.0474	0.11	0.12	0.0164	0.0008
Very confident in press	-0.0122	0.25	0.09	-0.1539	0.0019
Very confident in medicine	0.0016	0.51	0.37	-0.1472	-0.0002
Very confident in television	0.0157	0.18	0.10	-0.0795	-0.0012
Very confident in supreme court	0.0025	0.32	0.31	-0.0116	0.0000
Very confident in scientific	-0.0060	0.42	0.42	0.0032	0.0000
Very confident in congress	0.0088	0.14	0.13	-0.0039	0.0000
Very confident in military forces	0.0126	0.37	0.57	0.1988	0.0025

Table 6. Predicted Impacts on Reported Happiness by Group of Variables

Happiness	2.1980	2.1788	-0.0192
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Total of Impacts of Happiness

1 Demographics	-0.0063
2 Absolute Household Income	0.0492
3 Socio-economic	-0.0092
4 Relative Income	-0.0014
5 Marital status & Children	-0.0322
6 Social Contacts	-0.0005
7 Watching TV	-0.0021
8 Social Trust	-0.0078
9 P-Group Membership	-0.0056
10 O-Group Membership	0.0031
11 Other Group	0.0006
12 Confidence in Institutions	-0.0025

SUB-TOTALS

A = 1 + 2 + 3 + 4	0.0324 Impact of Demo-Socio-Economic factor
B = 5 + 6 + 7 + 8 + 9	-0.0482 Impact of Intrinsic Relational Capital
C = 10 + 11	0.0037 Impact of Other Relational Capital
D = 12	-0.0025 Impact of Other Social Capital
E = B + C + D	-0.0470 Impact of Social Capital
Total (A + E)	-0.0146 Predicted decline in Happiness

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Definition of Variables

Happiness: 3 if respondent declares to be “very happy”, 2 if “pretty happy” and 1 if “not too happy”

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

Retired: 1 if respondent declares to have retired

Unemployed: 1 if respondent declares to be unemployed

Keeping house: 1 if respondent declares to be keep house as work status

Student: 1 if respondent declares to be a student as work status

Other: 1 if respondent declares to be neither working (full or part-time), nor retired, unemployed, keeping house or student

Parents divorced or separated: 1 if respondent declares to be not be with own parents at 16 years old because they where divorced or separated

Living with own parents at 16: 1 if respondent declares to be living with own parents at 16 years old

Ln household income/1000: natural logarithm of reported household income as provided in the GSS (variable name: coninc) divided by 1000 (dollars 2000)

Ln household per capita inc./1000: reported household income divided by the number of household component (household size) divided by 1000 (dollars 2000)

Household size: number of reported household members

Number of Children: reported number of children

% Diff. Regional price index: percentage of variation between average national house values for single-family detached homes on which at least two mortgages were originated or subsequently purchased or securitized and average regional values

Personal/regional: reported household income divided by the number of household component and by regional per capita income (dollars 2000)

Income very below average: 1 if respondent reported to be “very below average household income”

Income below average: 1 if respondent reports to be “below average household income”

Income above average: 1 if respondent reports to be “above average household income”

Income very above average: 1 if respondent reports to be “very above average household income”

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”)

Member of 1 Putnam’s Group: 1 if respondent declares to be member of one, and only one, among service groups, church organizations, sport clubs, art and literature clubs, national organizations, hobby clubs, fraternal groups and youth associations

Member of 2 Putnam’s Groups: 1 if respondent declares to be member of 2

Member of 3 Putnam’s Groups: 1 if respondent declares to be member of 3

Member of 4+ Putnam’s Groups: 1 if respondent declares to be member of at least 4

Member of 1 Olson’s Group: 1 if respondent declares to be member of one, and only one, among fraternity associations, unions, professional organizations and farm organizations

Member of 2+ Olson’s Groups: 1 if respondent declares to be member of at least 2

Member of 1+ other Groups: 1 if respondent declares to be member of at least one among veteran associations, political party and “other groups” (the latter is a residual category used in the GSS)

Hours watching TV per day: average hours per day watching TV reported by the respondent

Very confident in banks: 1 if respondent declares to be very confident in banks and financial institutions (0 is associated with answers “confident” and “not very confident”)

Very confident in major companies: 1 if respondent declares to be very confident in major companies (0 is associated with answers “confident” and “not very confident”)

Very confident in organized religion: 1 if respondent declares to be very confident in organized religion (0 is associated with answers “confident” and “not very confident”)

Very confident in education: 1 if respondent declares to be very confident in education (0 is associated with answers “confident” and “not very confident”)

Very confident in executive: 1 if respondent declares to be very confident in U.S. executive branch of government (0 is associated with answers “confident” and “not very confident”)

Very confident in organized labor: 1 if respondent declares to be very confident in organized labor (0 is associated with answers “confident” and “not very confident”)

Very confident in press: 1 if respondent declares to be very confident in press (0 is associated with answers “confident” and “not very confident”)

Very confident in medicine: 1 if respondent declares to be very confident in medicine (0 is associated with answers “confident” and “not very confident”)

Very confident in television: 1 if respondent declares to be very confident in television (0 is associated with answers “confident” and “not very confident”)

Very confident in Supreme Court: 1 if respondent declares to be very confident the U.S. Supreme Court (0 is associated with answers “confident” and “not very confident”)

Very confident in scientific community: 1 if respondent declares to be very confident in the scientific community (0 is associated with answers “confident” and “not very confident”)

Very confident in Congress: 1 if respondent declares to be very confident in the U.S. Congress (0 is associated with answers “confident” and “not very confident”)

Very confident in military forces: 1 if respondent declares to be very confident in U.S. military forces (0 is associated with answers “confident” and “not very confident”)

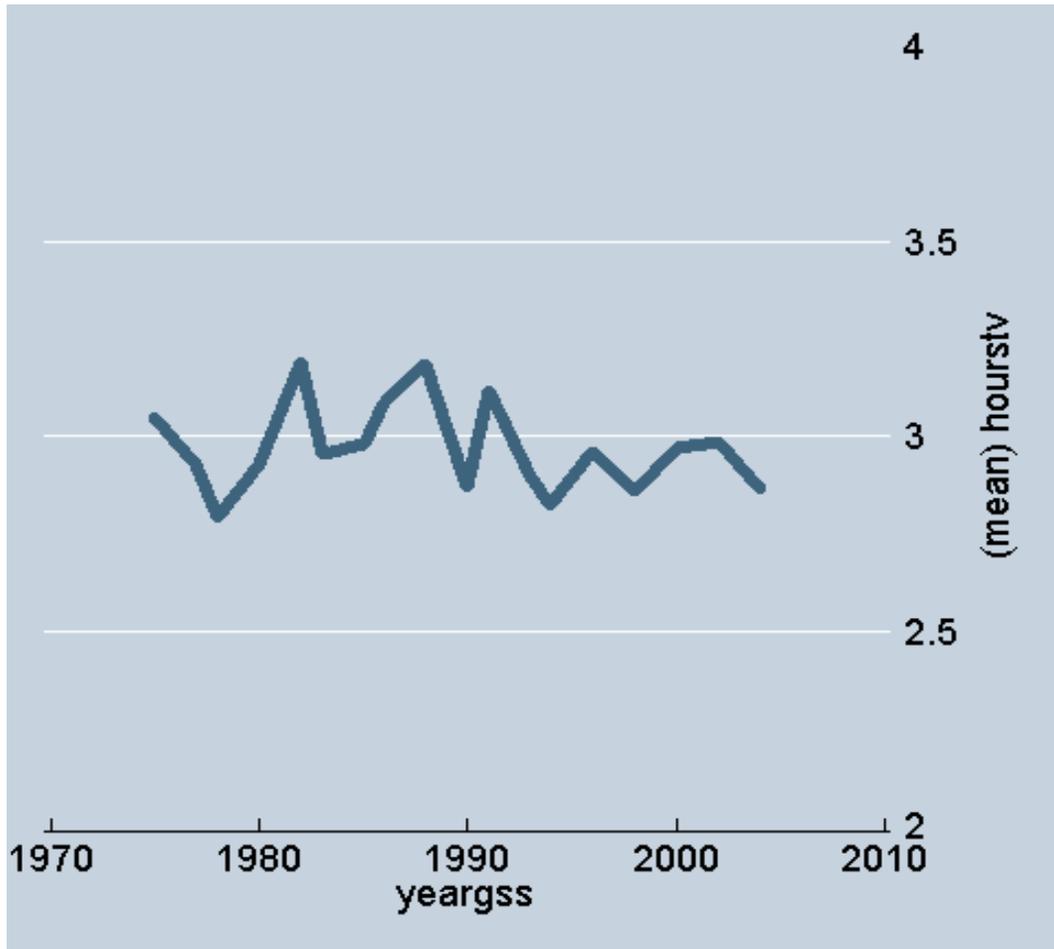
List of Figures

Illustration 1: Hours spent watching TV

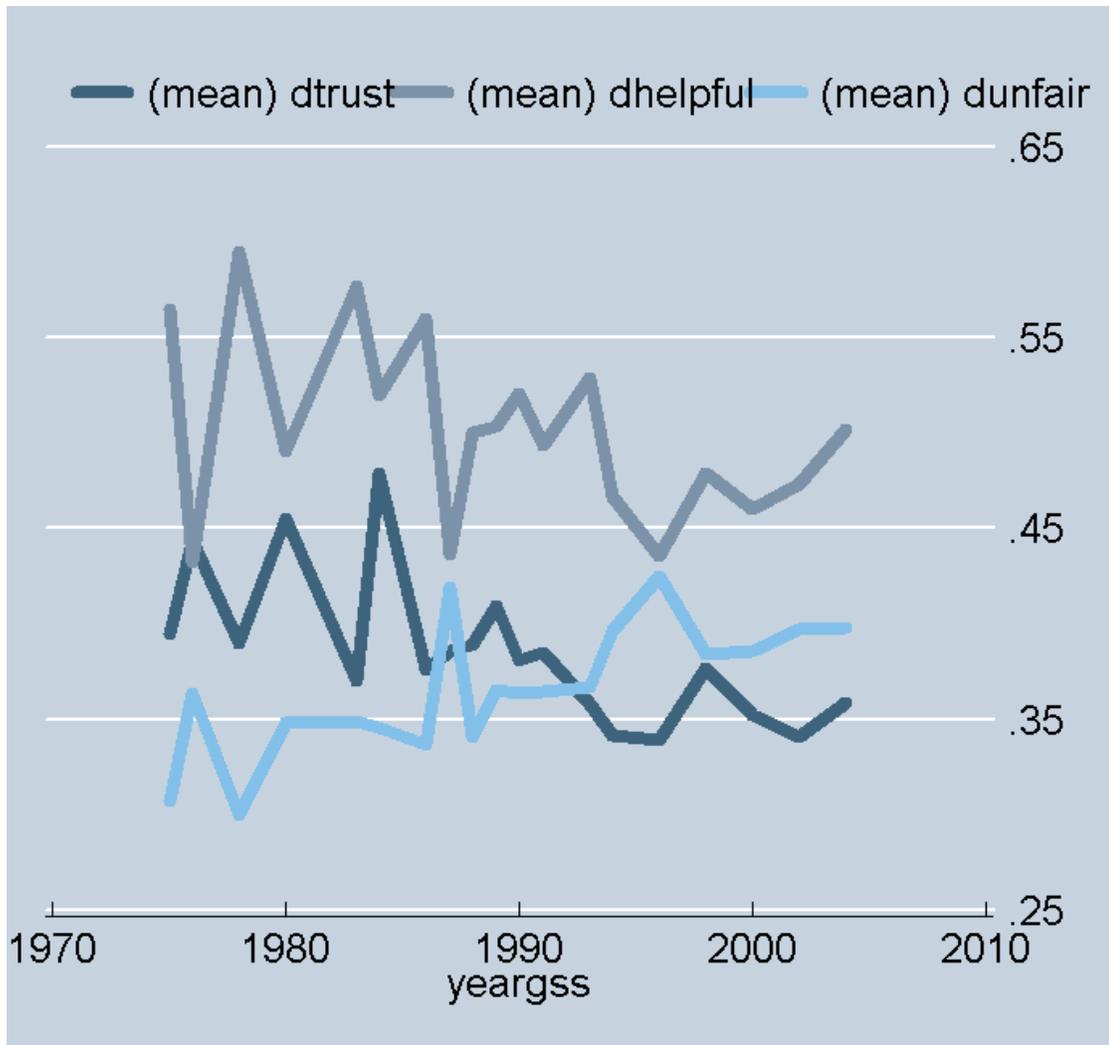


Illustration 2: Trust in individuals

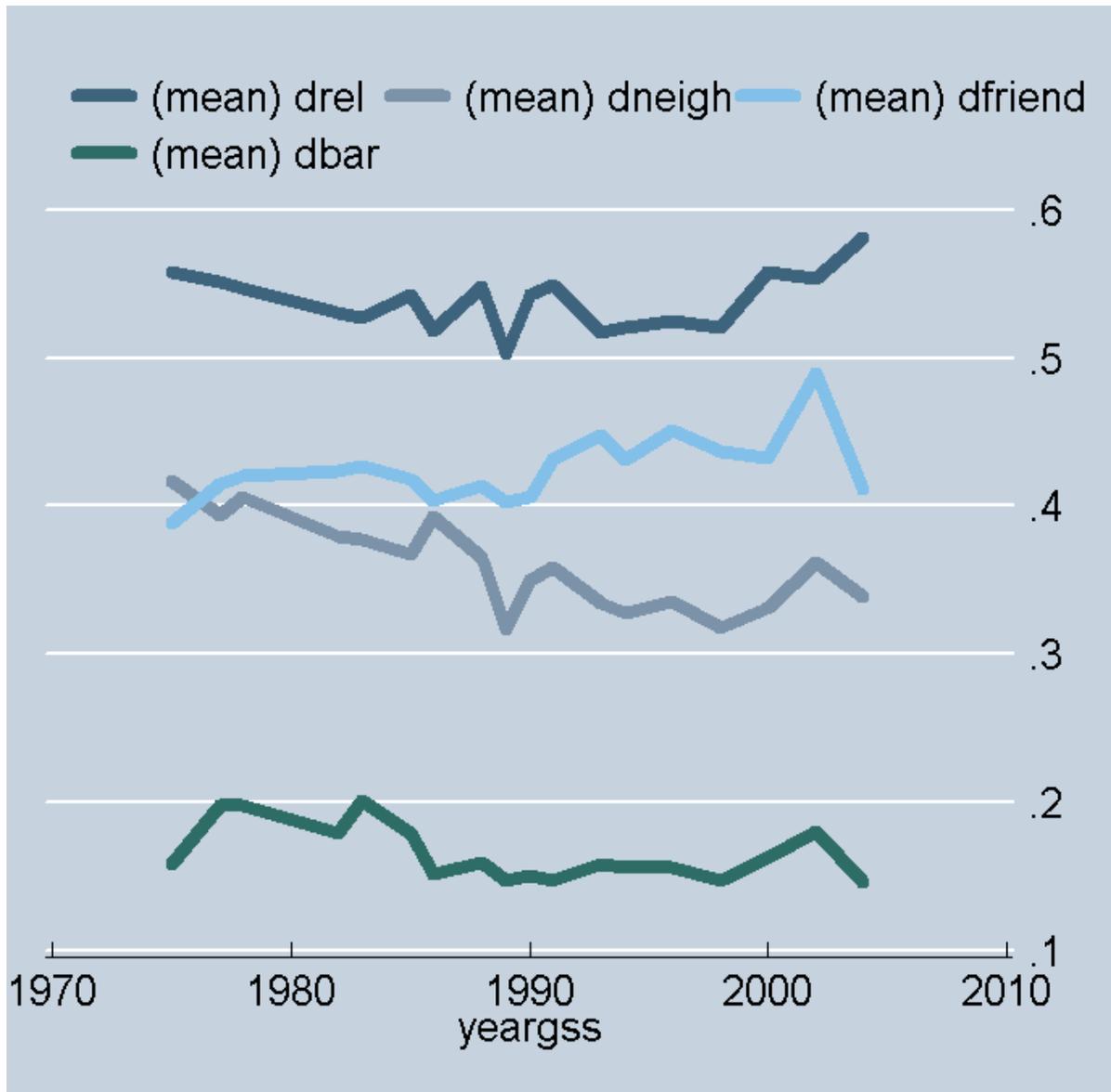


Illustration 3: Social contacts

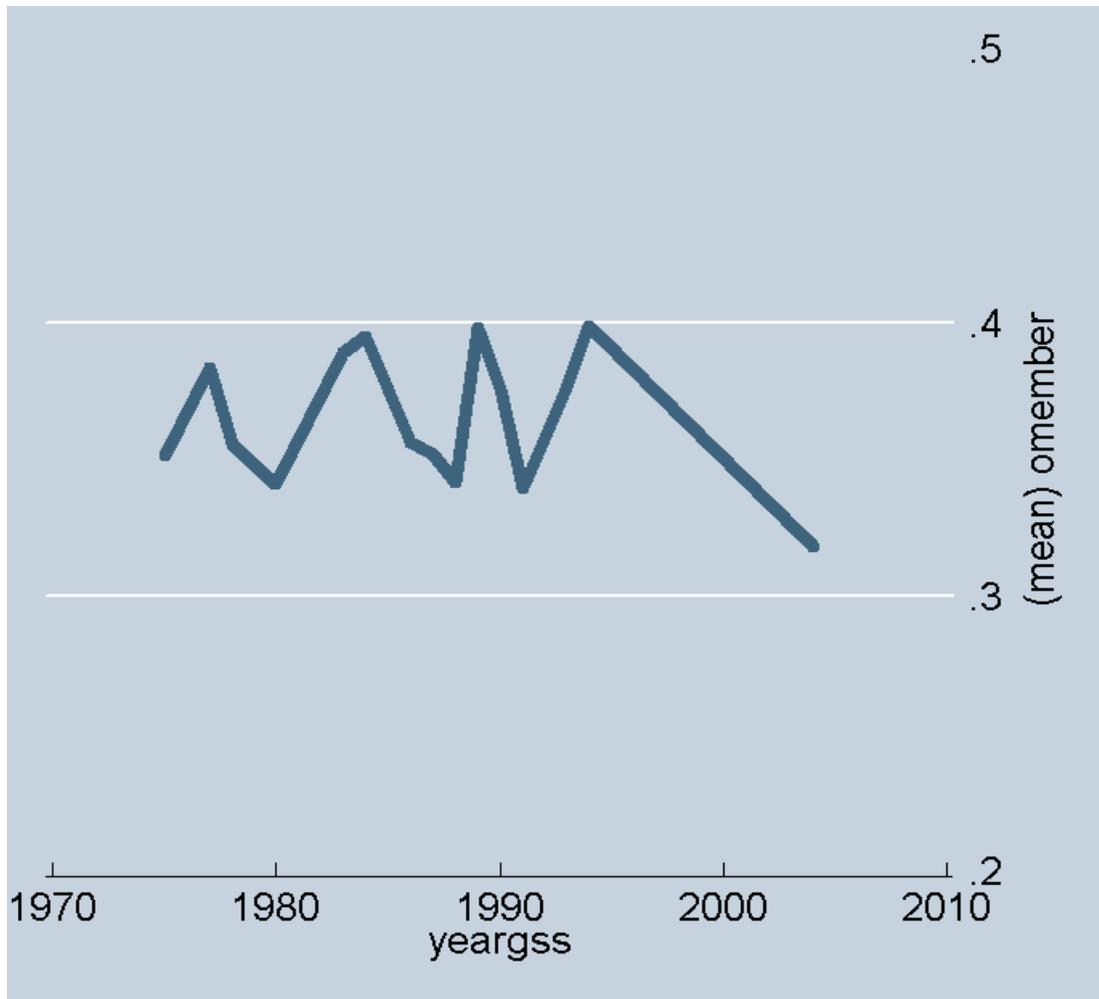


Illustration 4: Membership in Olson's groups

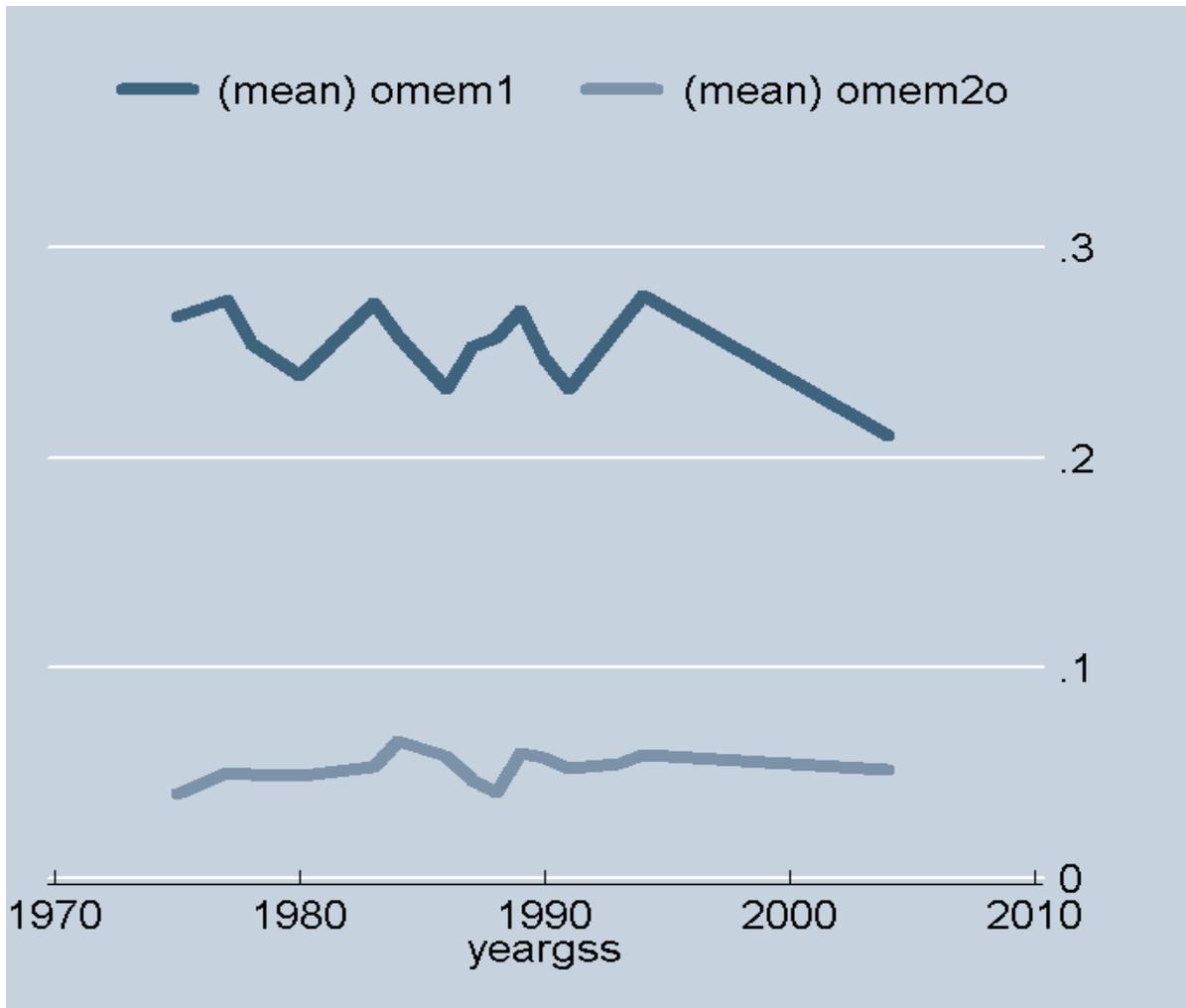


Illustration 5: Membership in 1 and 2 or more of Olson's groups

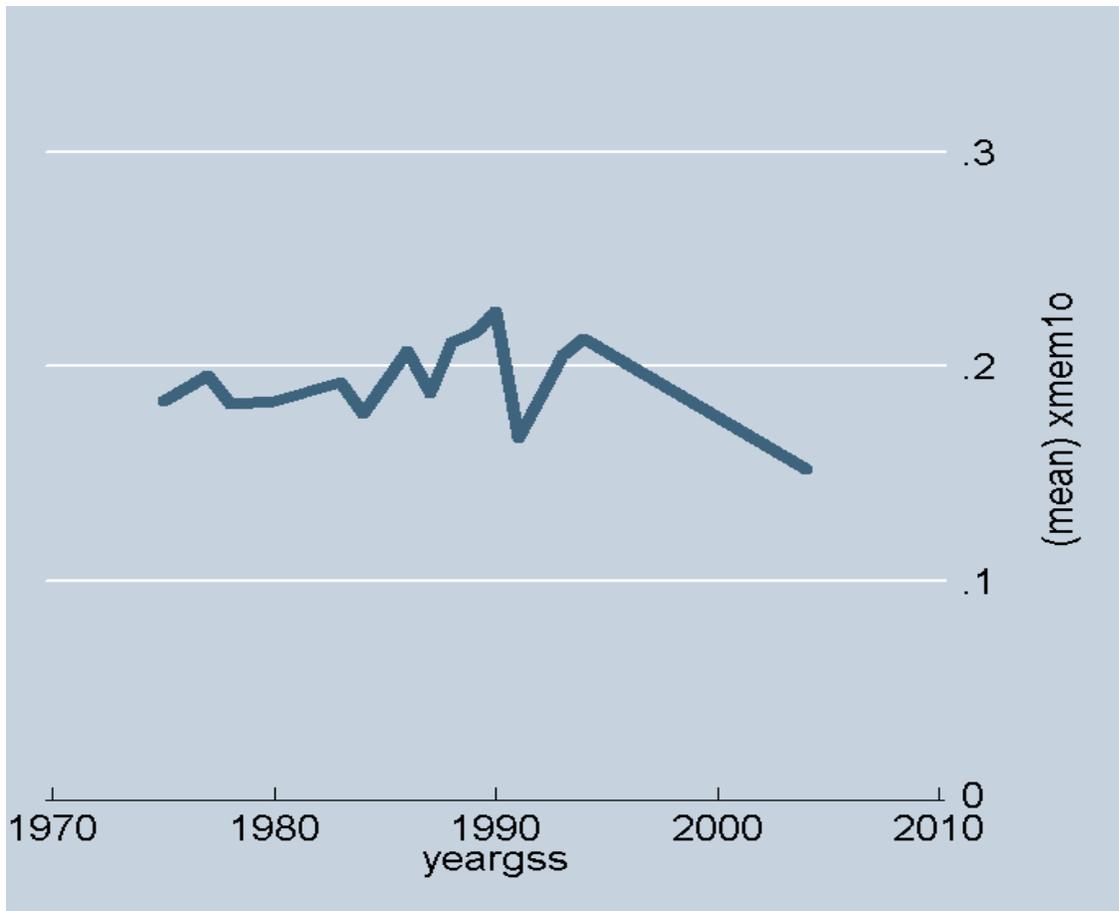


Illustration 6: Membership in Other groups

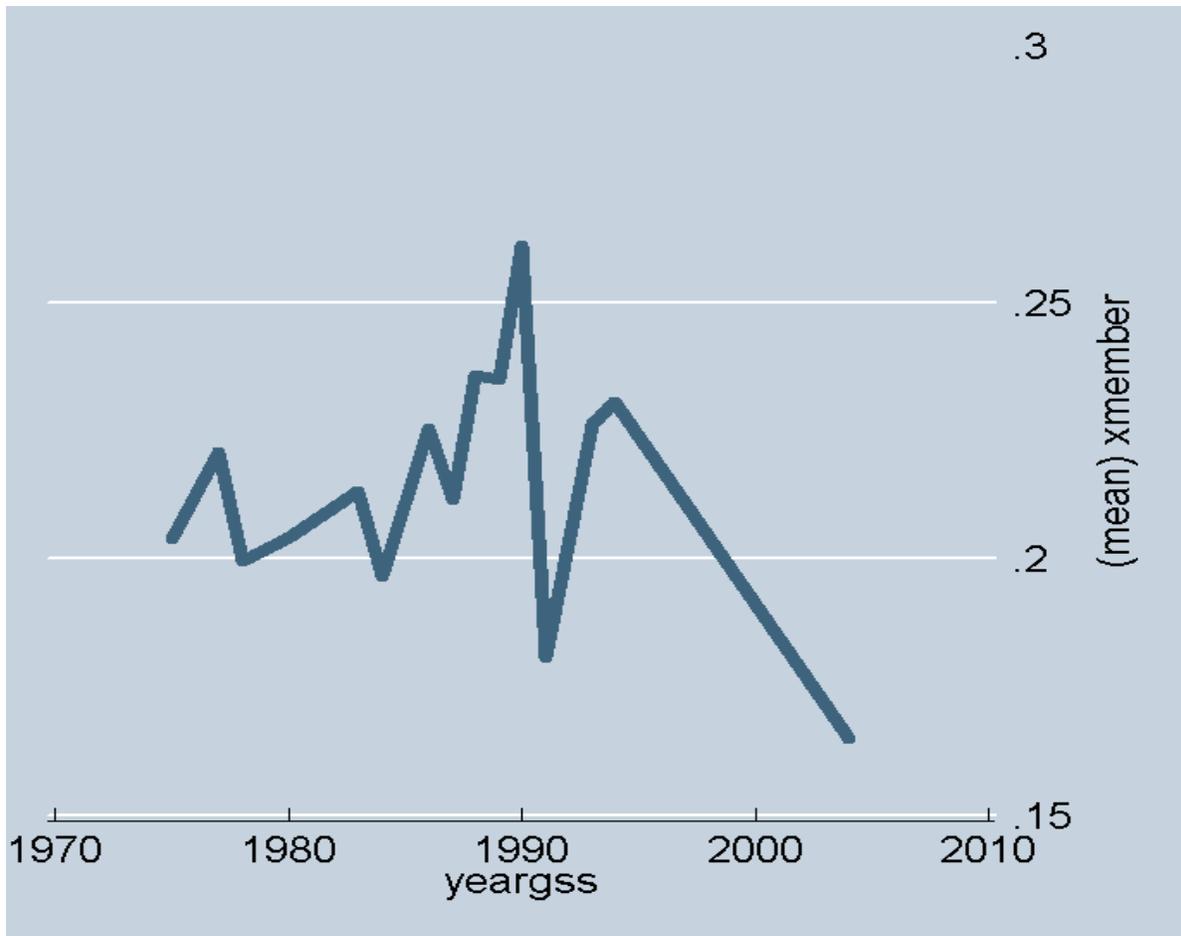


Illustration 7: Membership in 1 or more of Other groups

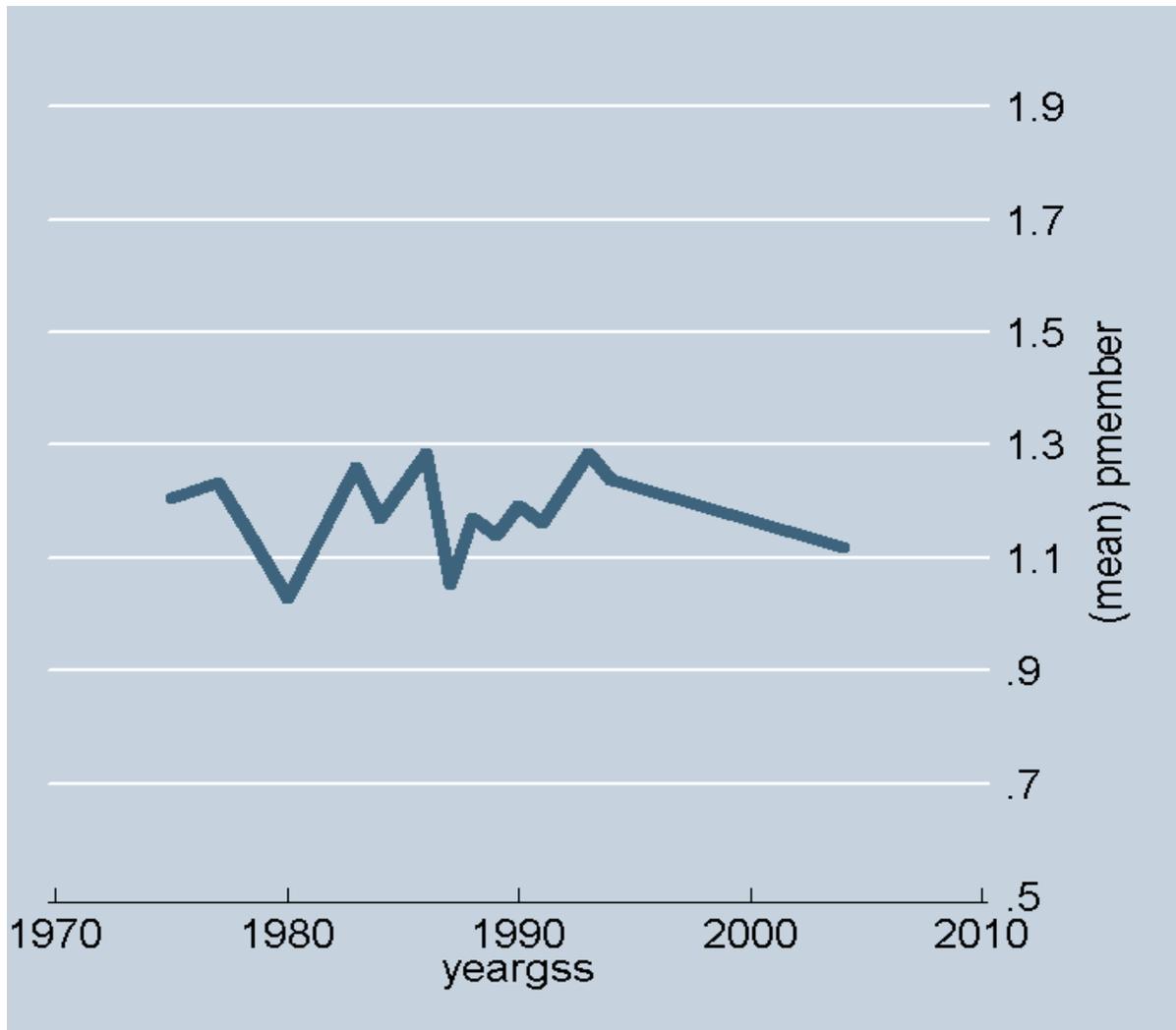


Illustration 8: Membership in Putnam's groups

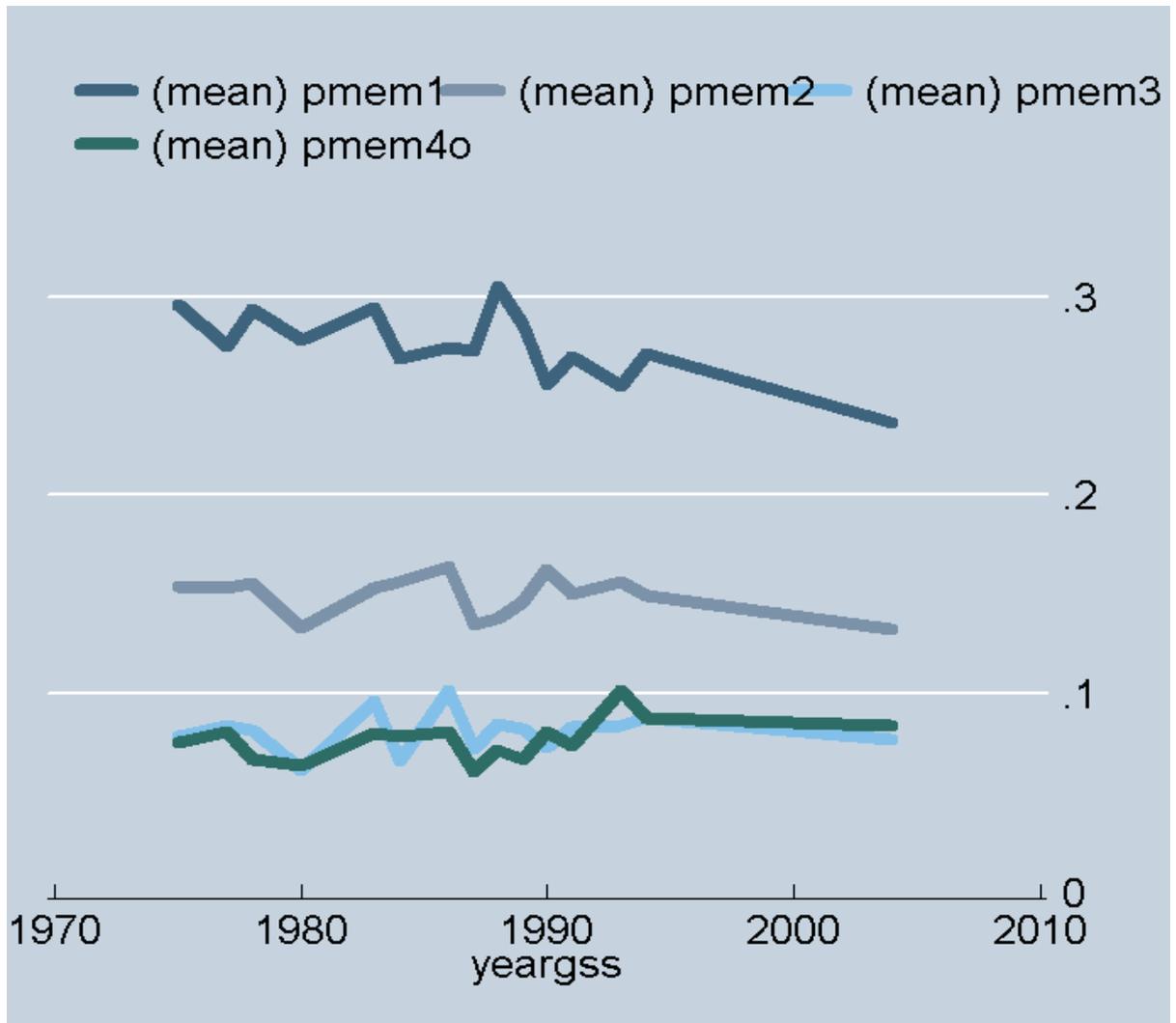


Illustration 9: Membership in 1, 2, 3 and 4 or more of Putnam's Groups