

# What does social cohesion contribute to the rural economy?

## A tale of four countries<sup>1</sup>

JEFF DAYTON-JOHNSON<sup>2</sup>

12 July 2000

### Abstract

I compare rural and non-rural levels of social cohesion, and its contribution to income, based on survey data for Romania, Nigeria, India, and Canada. Controlling for economic and demographic variables, there is significantly more associational activity in rural Canada than in non-rural Canada. With the same controls, there is a significant positive rural effect on most dimensions of trust in Canada, and scattered positive rural effects on trust elsewhere. There is surprisingly little evidence of links between associational activity and trust. The link between social cohesion and income is quantitatively different in the rural sector in India and Nigeria.

## 1 Introduction

An *ostinato* theme in Canadian letters is the primal link of rural people to the land<sup>3</sup>, and indeed the dense interaction among rural people themselves. In Nova Scotia novelist

---

<sup>1</sup>For his comments on an earlier draft, I thank Lars Osberg, and I look forward to thanking more people soon for reading this draft. Grateful thanks are due also to Lynn Lethbridge and Sai (Choi) Chua for their useful help in accessing the data, and to Reshmi Majumder for able research assistance. This paper was prepared for the Canadian Employment Research Forum (CERF) Conference on Rural/Urban Differences in Economic Development at Laurentian University, Sudbury, Ontario, September 2000. CERF provided financial support, which is gratefully acknowledged. Research assistance was also supported by the Department of Economics at Dalhousie University.

<sup>2</sup>Dalhousie University, Department of Economics, Halifax, NS B3H 3J5 CANADA; jeff.dayton-johnson@dal.ca

<sup>3</sup>Thus Ringuet writes of Euchariste Moisan, protagonist of *Trente arpents* (1938): “Soumis aux choses, il était un vrai paysan pour qui de plus en plus la terre était tout, plus que les siens, plus que soi-même.”

Ernest Buckler's classic *The Mountain and the Valley* (1952), protagonist David Canaan considers his (fictional) Annapolis Valley village of Entremont and muses that, over time, "the knitted warmth between its people had ravelled, until each was almost as alone in his own distraction now as the city people were..."

The notion that rural folk might exhibit more "knitted warmth" emerges also in contemporary development economics, where it is proposed that this knittedness might have positive economic consequences for agrarian economies. Development economists increasingly see village economies as potentially rich sites of social-capital accumulation. Good information about other people's economic actions combined with community norms of interaction can support co-operative behaviour capable of substituting for missing markets in credit and insurance (e.g., Coate and Ravallion 1993; Fafchamps 1992; Platteau 1991), or natural resources (e.g., Bardhan forthcoming; Dayton-Johnson 2000).

At the same time, concern that this knitted warmth has "ravelled" is a prominent concern in research and policy discussions in many countries. In the United States, political scientist Robert Putnam raised the alarm that the interconnectedness of Americans is declining precipitously and changing the nature of civic life there (see, *inter alia*, Putnam 1993a). In Canada, the Standing Senate Committee on Social Affairs, Science and Technology heard testimony from a wide array of commentators and issued an ominous report regarding trends in the nation's level of social cohesion (SSCSAST 1999). Moreover, the Senate report concluded that this ravelling of knitted warmth in Canada threatens economic performance.

This link from social cohesion to economic performance mirrors more recent development economics research. Narayan and Pritchett's (1999) work in Tanzania verifies the economic payoff of norms and information, finding that a one-standard-deviation increase in their measure of social capital — an index of associational activity — in a village is associated with 20 % higher per capita income.<sup>4</sup> Grootaert (1999), analyzing data from rural and non-rural Indonesia, finds a large (though not quite as large) positive effect of social capital relative to human capital. Cord *et al.* (1999) find that social capital in the Mexican countryside facilitated participation in a land titling program. Maluccio *et al.* (1999),

---

<sup>4</sup>To be precise, Narayan and Pritchett use household *expenditure* as a proxy for income.

similarly, find significant positive effects of individual social capital among South African households.

Several questions suggest themselves. Is there more social cohesion — however one might measure it — in the rural economy than there is among non-rural people? Does social cohesion have an economic payoff in the rural sector, and if so, is the contribution of social cohesion to economic outcomes greater there than in the non-rural sector? As Friesen’s [8] analysis of social cohesion in urban neighbourhoods makes clear, the networks that knit community members together might be economically productive, or they might be merely redistributive. For example, dense social networks might make labour markets function more efficiently by solving asymmetric-information problems; alternatively, the same networks might lead to nepotism in job referrals, and lower efficiency in the labour market. Generally, trust in others can facilitate co-operative behaviour and collective action in social interactions that otherwise resemble the prisoners dilemma. But an individual’s trust might have a very restricted radius; such is the classic distinction made by Talcott Parsons (1964) between ‘particularistic’ and ‘universalistic’ trust.<sup>5</sup>

This paper seeks to determine at a relatively aggregate level whether there is more social cohesion in the rural economy, and whether the economic payoff of social cohesion is different in the rural sector. Sections 4 and 5 estimate a series of statistical models of the determinants of associational activity and trust in Canada, India, Nigeria, and Romania, using data from the World Values Survey. These models include indicator variables for respondents’ rural status. Section 6 reports results of statistical models of respondents’ income levels, including interaction terms between rural status and associational activity and trust.

## 2 Conceptual framework

Much ink has been spilled on the meaning of terms like “social capital” and “social cohesion”. People mean different things by these terms. In this section I’ll briefly outline the

---

<sup>5</sup>Bowles and Gintis (1998) consider the formation of parochial networks in an evolutionary game setting.

framework employed in this paper.<sup>6</sup> I begin with two assumptions: that prisoners-dilemma-like problems beset randomly-matched people in market economies, and that co-operative behaviour raises welfare. Social capital is defined as observable individual investments in time, money, effort, or other real resources, investments that raise the return to mutual co-operation. Two features of social capital merit emphasis: it inheres in the individual (like human capital), and the payoff accrues only if there is mutual co-operation. Social cohesion, in turn, is an environmental or state variable generated by social-capital investments; specifically, it is the discounted stock of social capital among the entire collective of players. Higher levels of social cohesion raise the return to social-capital investment. From this perspective, then, *social capital* comprises individual actions like joining an organization or doing volunteer work. Any person, in theory at least, has a stock of social capital. *Social cohesion* is a characteristic of a group of people, determined by their propensity to invest in social capital.<sup>7</sup>

Social capital has most often been empirically measured as a person's associational propensity. Cord *et al.* (1999), Maluccio *et al.* (1999), and Narayan and Pritchett (1999) all use variants of a *quality-weighted* index of group membership. In Narayan and Pritchett's Tanzanian study, for example, households report on the number of groups they belong to, but also on three dimensions of each group's characteristics: its inclusiveness (are members restricted to the same kin group or clan?); its homogeneity (are members from similar economic groups?); and its performance. From these responses, the authors construct a household index of social capital that weights each membership by the reported quality of the group.

---

<sup>6</sup>This is liberally drawn from the game-theoretic model provided in Dayton-Johnson (forthcoming).

<sup>7</sup>These definitions are similar in spirit to the conclusions of the Canadian Government's Policy Research Network on Social Cohesion, namely, that "social cohesion [is] an outcome of investments in social capital." (Cited from the Social Cohesion Network's Web site, <http://policyresearch.schoolnet.ca/networks/cohsoc/socialco-e.htm>, accessed in July 1999.) Stanley (1998) elaborates on this view, writing that "[s]ocial cohesion is the bonding effect within a society that arises spontaneously from the unforced willingness of individual members of a society to enter into relationships with one another in their efforts to survive and prosper," and furthermore that "[s]ocial cohesion is strengthened by the existence and creation of social capital."

Many other papers have used information from the World Values Survey (wvs) on group memberships, unweighted by any quality factor (e.g., Helliwell 1996; Knack and Keefer 1997). The wvs asked respondents about associational activity in a wide range of organizations. For each type of organization, respondents were asked whether they belonged to such an organization, and whether they did unpaid work for such an organization. This paper uses the number of types of organizations to which a respondent belongs, and for which a respondent volunteers, as measures of social capital in the analysis below.

Social cohesion, understood as a state variable that inheres in the community as a whole, could be approximated by the average level of social capital: the village studies mentioned above define a village index of what I call social cohesion in just that way. Alternatively, the wvs-based studies have focused on *trust* as a state variable that influences choices but is also determined by them. Granovetter's (1985, pp. 490–491) now-classic sociological theory of trust supports its interpretation as an indicator of social cohesion as I have defined it here: "...social relations, rather than institutionalized arrangements or generalized morality are mainly responsible for the production of trust in economic life." Seabright's (1997) repeated-game model of collective action explicitly generates trust in a similar fashion. The more people trust one another, the more likely that they will exhibit co-operative behaviour; trust, in turn, could be generated by a positive history of co-operative outcomes in the past.

The wvs has been critical to efforts to measure social cohesion, given its rich information on the degree to which people trust one another. Respondents were asked, "[g]enerally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" The proportion of respondents who agree that "most people can be trusted" is used as a regressor in Knack and Keefer's (1997) cross-country growth equations. Helliwell (1996) uses the individual responses as a dependent variable in his analysis of US and Canadian wvs sub-samples; I will do the same below. Unlike previous economic analyses of the wvs data, however, I will also use the survey's nuanced information on the dimensions of trust: respondents reported on the degree to which they trust members of their families, their fellow country-persons, and members of other groups. This information is particularly useful in discerning whether or not rural society is made up of enclaves of parochial trust.

### 3 Data

The paper uses data from the 1990 World Values Survey (wvs 1999), fielded in 45 countries. wvs respondents answered questions about their attitudes regarding “...work, the meaning and purpose of life, family life, and contemporary social issues.” The wvs has been used in many of the better-known economic studies of social capital and social cohesion, including Helliwell (1996), Knack and Keefer (1997), La Porta *et al.* (1997), and Woolley (forthcoming). The advantage of the wvs over other more conventionally socio-economic surveys is that it provides good information regarding several dimensions of behaviour that have been underlined as important in research on social capital and social cohesion. These dimensions include, most notably, the extent and characteristics of voluntary activity, of membership in groups and organizations, and levels of trust in others.

As suggested in Section 1, a reader of Canadian literature (and many others besides) would suspect that whether a respondent lived in the rural milieu or not would be important to her views and attitudes. Nevertheless, the wvs includes an interviewer-coded “rural/urban” flag only for four of the countries surveyed in 1990: Canada, India, Nigeria, and Romania. Though the choice is imposed by data availability, the four countries span an impressive number of characteristics: four continents; all of the World Bank development classes (low-, middle-, and high-income); industrial, transition, and developing economies.

The 1990 round of the wvs surveyed 1,730 Canadians, 1,001 Nigerians, 2,500 Indians, and 1,103 Romanians.<sup>8</sup> This paper will analyze these four national subsamples. The rural share of the sample is given in Table 2.<sup>9</sup>

---

<sup>8</sup>The Romanian survey was fielded in 1993.

<sup>9</sup>In many countries included in the wvs, the respondents form a stratified sample; a weight variable is included with the data set, and is used throughout this paper. The weight variable makes a big difference for the rural share of the population in Nigeria and India, where the urban population was oversampled; in Canada and Romania there is virtually no reweighting of the rural share using the weight variable.

## 4 Joining groups

As the brief review of research above indicated, many authors have measured social capital by means of a society's associational propensity. Do individuals join voluntary organizations? Do they perform unpaid work for those groups? The wvs asked respondents if they belonged to any groups of several types, including: social welfare; religious/church; education/cultural; trade unions; political parties; community action; third world development; environment; professional associations; youth work; sports/recreation; women's groups; peace movement; animal rights; health-voluntary; other groups. For the same list, respondents were asked if they performed any unpaid work for such groups. One must be careful about the interpretation of the responses to these questions: previous analyses of the wvs data have counted up the number of "yes" responses to the membership questions, for example, and presented that sum as the "total number of memberships". This is incorrect. That sum represents the number of *types* of organizations to which the respondent belongs. Someone who belongs to ten community-action groups but no other groups would, by this reckoning, have one membership, while someone who belonged to one religious organization and one education/cultural organization, would have two memberships. Even so, summing the number of yes responses is an interesting measure of the variety of associational activities of a given respondent. Finally, respondents who were members of some group or who had performed voluntary work were asked to indicate their motivation for doing so.

For the four countries under consideration in this paper, the data on associational propensity are uneven. For Canada and Romania, the data on memberships and voluntarism are complete; for India and Nigeria, there is no information on numbers of memberships or voluntary activities. Nevertheless, the Nigerian sample has complete information on the *motivation* for joining groups; I can take this as a crude indicator of associational activity, assuming that anyone who was asked these questions is a member of, or volunteer for, some group. In this section, there is no analysis of the Indian data, which are missing for all of these questions. Table 1 reports the percentage of the rural and non-rural samples for each country, excluding India, reporting some form of associational activity. *Memberships* is the percentage of respondents reporting membership in at least one type of group; *voluntarism*

is the percentage reporting unpaid work for at least one type of group; *any activity* is the percentage responding to the motivational questions.

Several interesting patterns emerge. First, there appear to be important differences between the propensity of rural and non-rural folk to join and volunteer for groups. Nevertheless, while rural Canadians are more likely to associate than their non-rural counterparts, rural Nigerians and Romanians are *less* likely to associate in this way than their opposite numbers in town. Second, in Romania and Canada, higher proportions of people are likely to be members of groups than to volunteer for groups. Third, there are significant differences between countries: comparing the crude indicator of any activity, Nigerians emerge as the most associational of the three nationalities, while Romanians are the least likely to join and volunteer.

Do rural/urban differences stand up to multivariate analysis? I'll consider each of the three countries in turn. In each case, a host of independent variables are employed to explain variation in the associational variables summarized in Table 1. Among the independent variables are:

- respondent's age
- respondent's level of education (school-leaving age)
- respondent's income level<sup>10</sup>
- whether the respondent lives in the rural sector
- whether the respondent is married
- whether the respondent is female
- the number of children of the respondent
- a number of regional indicators (detailed for each country below)
- a series of interactions between the rural dummy and the regional indicators

---

<sup>10</sup>This is a categorical-response variable for all four countries, but there are important differences among the four, discussed below.

- a number of ethnic and religious indicator variables (detailed for each country below)

Given that no pretence of establishing causality is made, I allow myself the luxury of including some almost certainly endogenous variables on the right-hand side in order to detect correlations: a dummy indicating that the respondent agrees with the statement “in general, most people can be trusted”; a categorical variable indicating the degree to which the respondent trusts other members of her nationality. These trust variables are considered in more detail in Section 5 below.

In addition, I include in all the models that follow a dummy variable meant to capture parochial sentiment. People were asked, “which of these geographical groups would you say you belong to first of all?” The choices were: your town, your province or region, your country, your continent, the world. How many respondents belong first and foremost to their local community? (The proportions are given as “town-first” in Table 2.) Table 2 summarizes the explanatory variables for the four countries. A series of country-specific controls are discussed and summarized in the Data Appendix.

#### 4.1 Canada

Not all groups have the same implications for social cohesion and economic performance. Knack and Keefer (1997) differentiate between “O-groups” (for Olson 1965), which are more likely to engage in rent-seeking activities detrimental to social welfare, and “P-groups” (for Putnam 1993b) more likely to produce social cohesion. Following Knack and Keefer, I distinguish between reported membership and voluntary activity in O-groups (trade unions, political parties, and professional organizations) and P-groups (religious/church organizations, education/arts/music/cultural groups, and youth-work groups). Accordingly, in addition to estimating the total number of memberships and voluntary activities, I separately estimate membership and voluntarism restricted to P-groups and O-groups.

Table 3 presents the results of the membership models for Canada. (*t*-statistics are reported in parentheses.) Note that the mean number of group types to which a respondent belongs is 1.7. The average respondent is a member of 0.4 types of O-groups and 0.5 types of P-

groups. (Given the definition of O-groups and P-groups above, the maximum value each of these variables could take is 3.0.) Years of education, income, living in a rural area, and age are all positively and highly significantly related to the total number of membership types reported by respondents; more-educated, richer, older rural denizens are most likely to join a wide array of organizations. Parochialism helps; respondents who identified with their town more than their province or Canada as a whole, are significantly and positively more likely to be members of more groups. Catholics and those who are members of no religious group are less likely to join. Among the regional dummies, British Columbians are much more likely (than Ontarians) to members of more types of groups. People in rural Saskatchewan are less likely to be members of more groups (a very large negative effect), and people in rural Newfoundland are much more likely to join (a very large positive effect). (Both the rural Saskatchewan and rural Newfoundland effects recur in other models below.)

Thus, controlling for a wide range of factors, being a rural Canadian is significantly positively associated with being a member of more types of groups and organizations. The magnitude of the effect is large, equal to about three times the effect of an additional year of education and about five times the effect of an additional \$ 10,000 of annual income. The rural effect is significantly dampened if one lives in rural Saskatchewan, and significantly enhanced if one lives in rural Newfoundland.

For the rent-seeking O-groups, the rural dummy is no longer significant, though education, income, and age continue to have positive and significant effects. Moreover, working full-time is significantly and positively associated with more O-group memberships, presumably because one is thus more likely to be a member of a trade union or professional organization. The estimated coefficient for women is negative. Living in Manitoba or Alberta (relative to living in Ontario) is associated with more O-group memberships.

For P-groups (religious/church organizations, education/arts/music/cultural groups, and youth-work groups), the estimated coefficient on the rural dummy is once again significant, and so are the estimated coefficients on education, and income. Women and people with children are more likely to be members of P- groups (in the latter case, presumably because youth groups are included in this category); Catholics and the non-religious have

negative coefficients. Unlike the case of O-group memberships, working has a negative coefficient. Perhaps these groups require a larger time commitment, which conflicts with working hours. Québécois are less likely and Prince Edward Islanders more likely to be members of P-groups (compared to Ontarians). The rural-Saskatchewan (negative) and rural-Newfoundland (positive) effects mentioned above return here.

The rural dummy is significantly and positively related to higher numbers of memberships overall, and higher numbers of the beneficial P-group memberships; it is not a significant predictor of the putatively pernicious O- group memberships.

Table 4 estimates three models of voluntary activity. (*t*-statistics are reported in parentheses.) The table shows that the average number of types of groups for which a respondent does unpaid work is 1.0; the average respondent volunteers for 0.1 types of O-groups and 0.2 types of P-groups. The estimated coefficients on education, income, and the rural dummy are positive and significant for all volunteering, as well as for O-group and P-group volunteering. More children raises the number of group types for which one volunteers; this effect acts through P-group voluntary activity. Living in Alberta makes one more likely (than an Ontarian) to volunteer); this effect acts through O-group volunteering. The by-now familiar positive effect of living in rural Newfoundland and negative effect of living in rural Saskatchewan are present in all three models.

Because of the idiosyncrasy in the way the voluntarism and membership indices are added up — they count the number of organization *types*, but not the number of *groups* themselves — one might argue that a more revealing test would be simply to estimate the determinants of whether a respondent is a member of, or volunteers for, *any* type of group. After all, a person who is a member of sixteen different religious/church organizations will have a lower index of membership (1) than a member of one church group and one youth group (2). Therefore in Table 5, I define dummy variables for any memberships and any voluntarism and estimate probit models of the likelihood that these dummies are equal to one. (Standard errors are reported in parentheses.)

The list of significant variables and their signs in Table 5 is not qualitatively different from those in Tables 3 and 4. For membership, education and income are positive, as is

self-identification with one's town, employment, and number of children. Catholics and the non-religious are less likely to be members of at least one group. Respondents in rural Saskatchewan are less likely to be members of at least one group, and those in rural Newfoundland are far more likely. Some estimated coefficients that were not significant above, but are significant here, include negative effects of living in Nova Scotia and Québec (relative to Ontario), and positive effects of living in *rural* Québec (twice as large in absolute value as the negative Québec effect) or rural Alberta. There is no significant rural effect on membership; the rural dummy is not even remotely significant. Thus the broad rural effect on the threshold of at least one membership works through the rural populations of Québec, Saskatchewan, Alberta, and Newfoundland, not all of which are of the same sign. The rural effect is still positive and significant for voluntary activity, as are the effects of education, income, and number of children. Rural Saskatchewan respondents are much less likely to volunteer for at least one type of group (and there is no effect of living in rural Newfoundland).

In sum, the WVS data provide compelling evidence that there is more social capital in rural Canada than in non-rural Canada — those investments of time and effort that constitute social capital are more prevalent there. Controlling for basic economic and demographic characteristics and regional variations, rural Canadians are likely to be members of a wider array of organizations, with the noteworthy exception of the non-productive O-groups, than their non-rural counterparts. Likewise, rural Canadians are likely to volunteer for a wider array of organizations (including O-groups as well as P-groups) than non-rural Canadians. Basic characteristics like education, income, age, living in a rural area, and regional indicators explain very little of the observed variation in Canadians' propensity to join and volunteer for organizations. Nevertheless, many of these characteristics are quite significantly related to those variations, and within this set of independent variables, living in a rural area is both statistically and economically significant as a positive predictor of associational propensity.

## 4.2 Nigeria

Analysis of the Nigerian data is hampered by the lack of data on types of groups to which respondents belong, and for which they volunteer. Nevertheless, the data reveal respondents' *motivation* for their group activity. The proportion of respondents who answered these motivation questions as members or volunteers for some group provides a crude indicator of associational activity. Table 6, estimates a probit model that this indicator is equal to one. (Standard errors are reported in parentheses.)

Aside from a negative estimated coefficient on the the rural-Ilorin interaction dummy, there is no significant effect of rural status *per se* on associational activity in Nigeria; despite the difference between the rural and non-rural associational propensities reported for Nigeria above, the effect disappears once other variables are controlled for. In the Nigerian sample, neither income nor education nor age have any significant effect on the likelihood of associational activity. Women are significantly less likely to be part of some group, as are ethnic Hausa. Moreover, respondents in certain regions — Jos, Kano, Zaria, Madugari, and Kaduna — are significantly more likely to exhibit associational activity than their counterparts in Lagos.

## 4.3 Romania

As reported above, reported associational activity among Romanians is substantially lower than that of Canadians and Nigerians: 70 % report no memberships, and 75 % report no voluntary activity. Given these rates, I have chosen not to separately estimate models of membership and voluntarism for P-groups and O-groups, even though the data are available: 22 % of Romanians report membership in at least one O-group, and only 6 % report membership in a P-group, and the rates are lower for unpaid work in O-groups and P-groups. Instead, I estimate probit models with dummy variables for *any* memberships and *any* voluntary activity on the right-hand side, similar to the models reported in Table 5 for Canada. (Romania-specific explanatory variables are detailed in the Data Appendix.)

Table 7 reports the results of two probit models: one a model of the determinants of

membership in at least one group; the other a model of any reported voluntary activity. (Standard errors are reported in parentheses.) Education is positively related to membership and voluntarism, as is employment. Income is negatively related to both. Catholics and Protestants are significantly more likely than others to be group members and volunteers. Full-time workers are significantly more likely to be members of, or volunteers for, a group, while women are significantly less likely. The variable that most interests us — the rural dummy — is not significant, nor are any of the rural-regional interaction variables.

#### 4.4 Summary of findings: joining groups

Simple cross-tabulations of different indicators of associational activity and rural/non-rural status reveal significant differences for Canada, Nigeria and Romania. Nevertheless, while rural Canadians are *more* likely to be members of, or volunteer for, groups than their non-rural counterparts, the pattern is just the opposite in Nigeria and Romania.

Analyzing these data in a series of multivariate models reveals further differences among the three countries. The positive rural effect on social capital is quite strong in Canada, while the negative rural effect in Nigeria and Romania largely disappears when other variables are controlled for. What does this mean? This is the (cross-sectional) opposite of the (time-series) effect one would predict: that as economic development takes place, rural communities would gradually lose their social capital advantage over non-rural regions — just as the fictional David Canaan noted in Section 1. But if group membership and voluntary activity are also more likely, at the individual level, the higher is individual income, then the low-income effect of living in a rural community might swamp the greater opportunities for social capital there, until average incomes rise above a certain level. Economic development, in the guise of higher per capita income, is not the only difference among these three countries, of course. Romania in 1993 was at the very initial stage of transition from socialism, and from a peculiarly thorough authoritarian rule. Rural/urban differences in group memberships might have been less pronounced in a state-socialist economy.

## 5 Trust

From an economic perspective, social capital — so frequently measured by associational activity, as above — is merely instrumental. Social capital is relevant only insofar as it improves economic performance. One likely channel linking social capital and economic performance is through the generation of trust. If people trust one another, they are more likely to enter into the complicated incomplete-contracts kind of relationships that predominate in the real-world economy. This includes the relationships among co-workers, between workers and employers, among the links in the commodity-distribution chain, and so on. In the framework developed earlier in this paper, the level of trust is an indicator of social cohesion rather than social capital. It is an environmental or state variable generated by the interactions of social-capital investments.

Thus this section asks, is there more trust in the rural economy? The WVS affords us many ways to answer this question. All respondents were asked whether they agreed that “most people can be trusted”. The proportion that responded affirmatively is shown in Table 1. As with associational activity, there are significant international variations. It is interesting to note that in all countries the rate of trust is ever so slightly higher among the non-rural population; only in Romania is the reverse true. If indeed social capital generates trust, as people interact more frequently by means of the groups they join, then this is not surprising for most of these countries. Rural people are less prone to join groups, and they evince less trust as a result. Then the real surprise is Canada. On the basis of bivariate statistics at least, rural Canada has significantly more associational activity, but less trust, than non-rural Canada. On the face of it, then, social capital is less productive in rural Canada. Ideally, one would like a very local mean value of trust as a measure of social cohesion. Then one could regress this mean value on local levels of group membership and voluntary activity, as well as other socioeconomic variables. The lack of more precise geographic information in the WVS precludes the use of this strategy, although I will consider the possibilities for this in Section 7 below. In any case, it should be understood that individually reported trust is perhaps a somewhat noisy measure of trust present in the community.

Other information on trust from the WVS has not been as extensively analyzed as the

general trust question discussed above. Respondents reported the degree to which they trust members of a variety of groups: their families, their fellow country people, members of significant population groups (the other official-language group<sup>11</sup> and recent immigrants in Canada, Hausa, Igbo and Yoruba in Nigeria, Hindus and non-Hindus in India), and certain classes of foreigners (Americans in Canada, Pakistanis in India). Romanians were asked only about their family members and other Romanians. The response categories were as follows: trust them completely; trust them a little; neither trust nor distrust them; do not trust them very much; do not trust them at all. (For the purposes of analysis in this paper, I have multiplied the responses by  $-1$  so that complete trust has the highest numerical value.)

Finally, in another portion of the wvs, Canadians, Indians and Nigerians were asked “How much do you trust the government to do what is right?” The responses (again multiplied by  $-1$  in the statistical analysis below) are: almost always; most of the time; only some of the time; almost never.

## 5.1 Canada

Table 8 reports the results of a probit model predicting the probability that a respondent agrees with the statement “most people can be trusted”. (Standard errors are reported in parentheses.) This model is similar to the basic trust equations estimated by Helliwell (1996). (To his list of explanatory variables, I add income, age, a rural dummy, and the number of types of groups for which the respondent volunteers; my regional dummies differ from Helliwell’s.) The cross-tabulation reported above suggests that there is little difference in overall trust between rural and non-rural Canadians, and indeed that trust is marginally lower in rural Canada. The probit model shows that, controlling for many other factors, the estimated coefficient on the rural dummy is positive and significant at the 90 % level. Education, income, and age are also positively and significantly associated with higher overall

---

<sup>11</sup>According to the survey documentation, respondents were asked about their trust in members of the language group other than the language in which the interview was conducted. Thus, Anglophone Québécois would have been asked about Francophone Canadians, and New Brunswick Acadians would have been asked about Anglophone Canadians.

trust. Also included on the right-hand side of the probit model are the number of types of groups to which a respondent belongs, and for which a respondent volunteers. The estimated coefficient on number of membership types is significant and positive; the coefficient on the index of voluntary activity, however, is not significant. Several regional dummy variables are significant: Québécois are less trusting (relative to Ontarians), while Albertans and British Columbians are more trusting. Rural respondents in Alberta and British Columbia, however, are significantly less trusting, suggesting important urban/rural cleavages in those provinces. Respondents in rural Saskatchewan are significantly less trusting, and rural Newfoundlanders are significantly more trusting.

Is there a rural effect on trust in particular groups in society? A series of models in Table 9 estimate the determinants of trust in family members, other Canadians, speakers of the other official language, recent immigrants, and Americans. The method of estimation is ordinary least squares. (*t*-statistics are reported in parentheses.) The dependent variables in the first five columns of Table 9 are five-level categorical responses, as detailed in the previous section. Using OLS essentially treats the dependent variables as though they were continuous, which they are not: while this may introduce some difficulty in interpreting the standard errors from the regression, this paper assumes that the underlying levels of trust in fact form a continuum. In none of these models is there a significant rural effect, as measured by the estimated coefficient on the rural dummy.

Table 9 illustrates that there is no effect of income, education, age, or rural effect on trusting one's family members. Women evince significantly higher trust in their family members, as do Protestants. The only significant regional variation is that Albertans trust their family members more (than Ontarians). Education, perhaps surprisingly, has a *negative* and significant effect on reported trust in fellow Canadians, while older people tend to trust other Canadians more. There are no significant regional variations in trust of fellow Canadians except that respondents from Saskatchewan report lower trust.

There is no rural effect on trust in speakers of the other language, in that the estimated coefficient on the rural dummy is negative, but significant only at the 85 % level.<sup>12</sup> In this

---

<sup>12</sup>22.8 % of the 1990 wvs surveys in Canada were conducted in French. Although there are Francophone

model I included a dummy variable (“French”) equal to one if the survey was conducted in French. The estimated coefficient on that dummy is large, negative, and significant: Francophone Canadians trust Anglophone Canadians significantly less than the latter trust the former. Several of the rural-regional interaction dummies have significant coefficients. New Brunswick respondents report significantly lower trust (than Ontarians) in speakers of the other language group, but rural New Brunswickers are more trusting; the net effect is that New Brunswick as a whole are more trusting of speakers of the other language group.<sup>13</sup> Québécois report greater trust in speakers of the other language (than the Ontario benchmark), and this effect is magnified in rural Québec. As I have controlled for the language of the interview, these results for Québec are quite striking. Manitobans report lower trust in speakers of the other language group (which, for all Manitoba respondents, was French), but rural Manitobans are significantly more trusting of French speakers, to that here, as in New Brunswick, the net effect is positive. Rural Newfoundland, finally, reports lower trust in French speakers. The estimated coefficient on the “town-first” dummy — equal to one if the respondent is “first and foremost” a resident of his or her town, rather than the province or country — is significant and negative, suggesting that distrust of members of another linguistic group is correlated with parochial sentiment.

In the model analyzing trust in recent immigrants to Canada, the estimated coefficient on the rural dummy is negative, but significant only at the 85 % level. Some rural effects emerge.<sup>14</sup> As with the case of trust in speakers of another language, there is evidence that trust in recent immigrants is closely and inversely related to parochial or particularist sentiments: the estimated coefficient on the “town-first” dummy is negative and significant. The index of group memberships, an indicator of social capital, has a positive and significant

---

households in every province of Canada, and significant Francophone minorities in Ontario, New Brunswick, and Nova Scotia, all of the French-language surveys were fielded in Québec. 92.6 % of the surveys in Québec were conducted in French, substantially under-representing the Anglophone population of that province.

<sup>13</sup>It should be noted that New Brunswick has a significant Francophone minority, on the order of a third of the provincial population.

<sup>14</sup>Rural Albertans are significantly less trusting of recent immigrants, compounding the lower level of trust evinced by Albertans generally (relative to Ontarians); rural Newfoundlanders and respondents in Prince Edward Island — all of whom are rural — report lower levels of trust in recent immigrants.

coefficient: people who belong to more (types of) groups trust immigrants more. Finally, respondents with more children trust immigrants more. It is interesting to speculate where this effect comes from.<sup>15</sup>

Finally, trust in the federal government is analyzed in the last column of Table 9. New Brunswick reports much lower levels of trust in government (than Ontario), but rural New Brunswick reports much higher levels of trust; both effects are significant. Trust in government in rural Alberta is significantly lower.

## 5.2 India

The dimensions of trust are explored for the Indian sub-sample. Table 10 reports the results of a probit model of overall trust. (Standard errors are reported in parentheses.) There is no discernable rural effect, either in terms of the rural dummy, or the rural-regional interaction terms. More education and having more children are associated with a greater likelihood to trust people generally. Protestants report much higher trust, while both Muslims and Hindus (identified in the survey as ethnic, not religious, categories) are significantly less trusting. (For the ethnic dummy variables, the comparison category is the non-Hindu, non-Muslim minority.) Respondents who claim to follow no religion are significantly less trusting. There are no regional effects, with the exception of West Bengal, where respondents are significantly less trusting (than Delhi, which is the omitted comparison category).

Table 11 reports the determinants of trust in one's family members, other Indians, Hindus, non-Hindus, Pakistanis, and government. (*t*-statistics are reported in parentheses.) For family members, the estimated coefficient on the rural dummy is negative and significant at the 99 % level: rural Indians are less likely to trust their family members. (As well, the interaction between the rural and Uttar Pradesh dummies is positive and significant, indicating a pocket of higher trust in one's family members.) Several of the regional effects

---

<sup>15</sup>As a parent of a small child, I'll venture one possibility. You meet lots of people through your kids; other parents at school, in playgroup, at the park, and you're more likely to come into contact with strangers that you might not meet in your professional or family life — including families of recent immigrants. Does this generate greater trust? I think so.

are significant.<sup>16</sup> Having more children raises one's trust in family, and women trust their family members more. Trust in family members is lower the older the respondent. Unlike the Canadian evidence discussed above, belonging to one's town first and foremost is negatively associated with trusting one's family. Trust in family, in India, is neither a rural nor a parochial characteristic; put another way, one is more likely to encounter people who do *not* trust their family members in rural enclaves of parochial sentiment.

For trust in one's fellow Indians, there is a strong rural effect: the estimated coefficient on the rural dummy is significant and positive. For trust in Hindus, the rural effect is negative, but only at the 87 % level of significance. The estimated coefficient on the parochial "town-first" dummy is negative: parochial sentiment and trust in Hindus are negatively correlated. Perhaps most surprisingly, Hindus themselves report lower trust of Hindus, although the effect is significant only at the 89 % level. Table 11 reports a model of trust in "non-Hindus"; one wonders exactly how this question was interpreted by respondents. Here the rural effect is again negative and significant.

For trust in Pakistanis, the pattern of results differs qualitatively from those detailed above. The rural effect is still significant and negative. Higher income and full-time employment reduce one's trust of Pakistanis. Muslims are significantly more trusting of their Muslim neighbours. Regionally, however, the patterns of trust are similar in many respects to the other dimensions of trust reported above. Finally, Table 11 reports on the determinants of trust in the central government. The rural dummy is negative, though significant only at the 83 % level.

Taken as a whole, the Indian results suggest similar patterns of trust among regions, and between rural and non-rural respondents, regardless of the object of that trust. Most germane to the objectives of this study, rural respondents are less likely to report trust generally, or to report trust in specific groups, including their own family members: the negative rural coefficient is statistically significant or marginally so (at levels higher than 80 %) in all of the trust models. The noteworthy sole exception is trust in fellow Indians: despite rural Indians

---

<sup>16</sup>Trust in family is higher (than in Delhi) in Bihar, Maharashtra, and Kerala, and lower (than in Delhi) in West Bengal and Andhra Pradesh.

lower levels of trust in Hindus and non-Hindus, and indeed their own family members, they are *more* trusting of Indians generally. The regional highs and lows of trust are similar in India regardless of whether the question refers to family members, other Indians, Hindus or non-Hindus, Pakistanis or government, suggesting regional differences in some overall measure of trust. Typically, estimated coefficients for Bihar, Maharashtra and Kerala are higher than Delhi, and West Bengal and Andhra Pradesh are lower. (Nevertheless, these regional differences are not captured in Table 10's probit model of general trust.) In most cases, the more educated and older the respondent, the lower the level of reported trust; married and employed respondents tend to be more trusting. The town-first measure of parochialism is negatively associated with trust in Hindus, but positively associated with higher trust in government.

### 5.3 Nigeria

Table 12 reports the results of a probit model of overall trust among Nigerians. (Standard errors are reported in parentheses.) Age, income, education, and rural status are insignificant predictors. Indeed, only three estimated coefficients are significant at customary levels: Protestants are more likely to be trusting, as are respondents in Zaria and Kaduna. (The comparison region is Lagos.)

Table 13 reports the determinants of trust in one's family members, other Nigerians, Hausa, Igbo, Yoruba, and the central government. (*t*-statistics are reported in parentheses.) The rural effect is mixed: rural respondents are significantly less trusting of their family members, significantly more trusting of Hausa Nigerians, and marginally more trusting of Igbo Nigerians. Several of the rural-regional interaction terms have significant coefficients, and except for trust in family members, the estimated coefficients are always negative. This suggests rural pockets of lower trust: rural regions of Jos, Abeo Kute, and Akure have negative and significant coefficients in at least three of the models of Table 13. In general, higher age and income are associated with higher trust, regardless of the object of that trust.

For trust in family members, there is, as in the Indian data, a significant and negative rural

effect. Unlike India, however, in Nigeria having more children is associated with less trust in family, and belonging first and foremost to one's town is associated with more trust in family. The indicator of associational activity has a positive and significant coefficient, providing evidence of a link between trust in family and social capital. Igbo respondents report more trust in their family members than do members of other groups. A least-squares regression model of trust in fellow Nigerians reveals no direct rural effect. Here too, an indicator of associational activity is significantly associated with trust in other Nigerians, but this time negatively. This is a puzzling effect of social capital on national cohesion: those who are group members or volunteers trust their fellow Nigerians less.

Table 13 reports the covariates of trust in Hausa, who comprise just over 10 % of the sample. Rural Nigerians report significantly higher trust in Hausa compatriots. Not surprisingly, Hausa respondents (unlike their Hindu counterparts in India) are more likely to trust other Hausa; Muslims, too, are more likely to trust Hausa. The parochial "town-first" dummy has a negative and significant coefficient. For trust in Igbo, just over 20 % of the Nigerian sample, the rural effect is not quite significant; rural Nigerians report higher trust in Igbo, but the effect is significant only at the 89 % level. Igbo respondents report higher trust in other Igbo; Hausa respondents do not reciprocate the trust that Hausa feel for them — the estimated coefficient on the Hausa indicator variable is negative and significant. The parochial "town-first" dummy has a negative and significant estimated coefficient. For trust in Yoruba, who comprise slightly less than 20 % of the sample, there is no direct rural effect on trust of Yoruba, although there are regional variations. Igbo respondents are significantly less likely to trust Yoruba, although the estimated coefficient on the Hausa indicator is not significant. Surprisingly, perhaps, Yoruba respondents are not significantly more or less trusting of each other than respondents generally.

Finally, Table 13 presents a least-squares model of trust in government. There is no significant rural/non-rural difference in trust of government. Older respondents are more trusting of the government, but education and income play no significant role. Protestants and Muslims are more trusting of the government, while the non-religious and Igbo are less trusting. There are many pronounced regional variations, including several significant coefficients on

rural-regional interaction variables.<sup>17</sup>

## 5.4 Romania

The Romanian wvs data on trust are not as complete as in the other three countries: respondents were asked whether people can be trusted in general, and only about their degree of trust in their family members and in other Romanians.

Table 14 presents the results of a probit model of overall trust among Romanians; the model predicts the probability that a respondent agrees with the statement, “in general, most people can be trusted”. (Standard errors are reported in parentheses.) The rural indicator is not at all significant, and indeed few of the demographic and regional explanatory variables are significant. Older respondents are significantly more trusting by this measure, as are full-time workers. The parochial “town-first” dummy has a negative and significant estimated coefficient, suggesting that generalized trust and being very locally identified are inversely related.

Table 15 demonstrates that many explanatory variables that are not significantly related to generalized trust are nevertheless significantly related to trust in one’s family members and in one’s fellow Romanians. (*t*-statistics are reported in parentheses.) First of all, there is a positive rural effect on trust in one’s family members (diminished slightly by a negative coefficient on the rural-Transylvania interaction term). Age and income are positively related to trust in family, as is full-time employment. The parochial “town-first” variable has a positive and significant estimated coefficient. Having more kids makes one trust one’s family members less. So too does greater voluntary activity: social capital is inversely related to trust in family members. The non-religious, and respondents in Banat, are less trusting of their family members. (The omitted comparison region is Bucharest.) For trust in other Romanians, there is a positive and significant rural effect, mediated by the

---

<sup>17</sup>Rural respondents in Zaria are more trusting of government (though the estimated coefficient on Zaria is negative and significant); rural respondents in Ibadan, Benin, and Port Harcourt are significantly less trusting of government. In Ibadan and Port Harcourt, the estimated coefficients on trust are positive, signalling important localized rural/urban cleavages in trust in those regions.

negative and significant coefficients on *every* rural-regional interaction. (The omitted rural-regional dummy is rural-Bucharest.) Age and income are positively related to trust in fellow Romanians, as is full-time work status. Women are less trusting than men, and education is negatively associated with trust. As with family members, the index of voluntary activity is negatively associated with trust of Romanians. Banat respondents are less trusting (than those in Bucharest), and those in Dobrovia are more trusting.

### **5.5 Summary of findings: trust**

The determinants of generalized trust and its particular components (trust in family members, fellow country-persons, other groups) exhibit quite different patterns across the four countries considered here. Only in Canada is rural status significantly and positively associated with trust in people generally. Rural status is negatively associated with many of the dimensions of trust in three of the countries. Most notably, rural people are significantly less trusting of their family members in the poorest countries, India and Nigeria. There are likewise some indications of parochialism in the rural sector: rural Canadians are marginally less trusting of recent immigrants and speakers of the other official language; meanwhile, rural Indians are less trusting of Hindus and non-Hindus. Nevertheless, rural people are more likely to trust fellow nationals in India and Romania, and more likely to trust members of significant minority groups (Hausa and Igbo) in Nigeria. Moreover, there is evidence of low-trust pockets in particular rural regions in all countries except for Romania. Finally, the effect of associational activity generally has no significant statistical relationship with the dimensions of trust, with noteworthy exceptions: group activity is associated with higher trust of recent immigrants in Canada and with higher trust in family members in Nigeria; paradoxically, group activity and lower trust in fellow Nigerians are correlated, as are group activity and lower trust in family members in Romania.

## 6 Income

Another objective of this paper is to answer, in this context, the question posed by Knack and Keefer (1997): does social capital have an economic payoff? Therefore, this section regresses income levels on a variety of explanatory variables, including indicators of associational activity and trust. In previous sections, we have seen positive and significant estimated coefficients on income (specifically, explaining most types of memberships and voluntary activity, general trust, and trust in family). One expects, thus, that measures of membership and voluntary activity, and trust, will be significant variables in models where income is on the left-hand side. But we also want to know if there is something qualitatively different about the way social capital leads to economic outcomes in the rural milieu. Thus I interact the rural dummy with the various indicators of social cohesion and social capital and include the interaction term on the right-hand side of the models below. If the social-cohesion indicator in question is  $s$ , where  $s$  might be total number of membership types, for example, or the level of trust, then the estimated coefficient on this interaction term can be denoted  $\hat{\beta}_{s \times RURAL}$ . Then the full effect of social cohesion on income is  $\hat{\beta}_s + \hat{\beta}_{s \times RURAL}RURAL$ . If  $\hat{\beta}_{s \times RURAL} \neq 0$  (whether positive or negative) then the effect of the particular social-cohesion indicator  $s$  is different in rural society than elsewhere.

### 6.1 Canada

Table 16 reports the results of three estimation exercises to determine the relationship between income levels, associational activity and trust, and rural/urban differences. ( $t$ -statistics are reported in parentheses.) In each case, a measure of social capital or social cohesion is included, together with an interaction of that measure and the rural dummy. Equation (i) includes the total number of membership types, equation (ii) includes the total of types of organizations for which the respondent volunteers, and equation (iii) includes the response to the question regarding whether “all people can be trusted”.

Model (i) demonstrates that there is a significant negative rural effect on income; controlling for other factors, a rural respondent had an income that was \$ 4,649 lower than his or her

non-rural counterpart in 1990. It is also important to note that the index of memberships has a significant and positive estimated coefficient: an additional membership type is associated with an addition of \$ 1,766 per year to a household's income. However, the interaction between the membership index and the rural dummy is not significant: the mechanism linking social capital (memberships) and income is not structurally different in the Canadian rural sector. It is not surprising that income is increasing in education and is higher for those working full-time. It is also higher (to the tune of \$ 12,853 a year) for those who are married, given that respondents were asked about household income. Virtually all of the regional dummies are significant, as respondents in all provinces (save Québec) have significantly lower household incomes than those in Ontario. The rural-New Brunswick interaction term is significant and positive, while the rural-Québec interaction term is significant and negative.

Model (ii) replaces the membership index with an index of voluntary activity on the right-hand side: the number of types of organizations for which the respondent performs unpaid work. With this change, the rural dummy becomes only marginally (88 %) significant. The estimated coefficient on the voluntary-activity index is positive and significant, and of a similar magnitude to the coefficient on memberships in model (i): volunteering for one more type of organization is associated with an increase in annual household income of \$ 1,289. The interaction term between voluntary activity and the rural dummy is not statistically significant. As in model (i), education, full-time employment and marriage raise household income. The regional variations are the same in model (ii) as in model (i).

Model (iii), rather than an index of social capital, includes an indicator equal to one if the respondent agrees with the statement "in general, people can be trusted". The model also interacts this trust dummy with the rural dummy. As in model (ii), the rural dummy is only marginally significant; the level of significance is 85 %, although the sign and magnitude of the estimated coefficient are similar across all three models. The trust dummy is positive and very significant; more trusting respondents earn some \$ 4,773 per year more than non-trusting ones. The rural-trust interaction, however, is not significant. Education, full-time employment status, and marriage are all significantly associated with higher annual income. The rural-New Brunswick and rural-Québec interaction terms, both significant in models

(i) and (ii), just slip under the 90 % level of significance in model (iii).

## 6.2 India

Table 17 reports the results of a model of income levels in India. (*t*-statistics are reported in parentheses.) As there are no Indian data on associational activity, the model uses trust and a rural-trust interaction term to determine the relation between social cohesion and earnings. There is a significant and negative rural effect; rural households, controlling for other factors, earn about 3,438 rupees less per year than non-rural ones. The trust dummy is not significant, but the rural-trust interaction is, providing support for the hypothesis that trust is related to income differently in rural India. Moreover, the estimated coefficient on the rural-trust interaction is negative. Conditional on living in the rural sector, trusting others is associated with lower income.

## 6.3 Nigeria

Table 18 reports results of two least-squares regressions explaining the categorical income variable. (*t*-statistics are reported in parentheses.) The only group-based indicator of social capital available for the Nigerian respondents is the dummy variable indicating that the respondent answered questions about his or her motivation for voluntary activity. Included among the explanatory variables in model (i) are the group indicator, the rural indicator, and an interaction between the two. None is significant at the conventional levels, although the interaction term is positive and significant at the 86 % level. Thus, conditional on living in the rural sector, joining a group or volunteering is associated with higher income at that level of significance. More education is associated with higher income. Older respondents report lower income. Female respondents report significantly higher income; recall that this question asks respondents about household income. This does not indicate that Nigerian women earn more than men, but it does mean that female survey respondents tended to come from higher-earning households.

Model (ii) in Table 18 replaces the group-activity dummy with the indicator of generalized trust; the trust variable is also interacted with the rural variable. In this estimation, the

rural dummy is not significant, but the trust dummy and its interaction with the rural dummy are. In particular, trust is significantly and negatively associated with the categorical income variable, while the rural-trust interaction is positively associated with income. What does this mean? Trust and income are inversely related in Nigeria; but conditional on living in the rural sector, trust is positively correlated with income. The other explanatory variables in model (ii) have more or less the same pattern of signs, magnitude and significance as they do in model (i).<sup>18</sup>

## 6.4 Romania

Despite the fact that the Romanian mean rural income is higher in a bivariate comparison, the rural dummy is not significant in any of the models reported in Table 18. (*t*-statistics are reported in parentheses.) In model (i), an index of membership activity (the number of types of groups to which a respondent belongs) is included, as is its interaction with the rural dummy; neither term is significant. More education is associated with higher income, while higher age is associated with lower income. Incomes are higher in Moldova, Transylvania, and Oltenia (relative to Bucharest); none of the rural-regional interactions is significant. Model (ii) uses the voluntarism index (the number of types of groups for which a respondent performs unpaid work) and its interaction with the rural dummy; again, neither is significant. Model (iii), finally, uses the trust dummy and its interaction with the rural dummy, and neither is significant. In models (ii) and (iii) the significant variables and their signs are identical to those of model (i).

---

<sup>18</sup>In both models in Table 18, Hausa and Igbo respondents earned significantly higher incomes, Yoruba respondents significantly less. There are important regional variations in income, many involving rural-regional interaction terms. Although the estimated coefficients for Kano, Madugari, Enuou and Kaduna (model (ii) only) are significant and positive, the rural-regional interaction terms for those regions are significant and negative. All of the regional indicators have positive coefficients, and most are significant; incomes are higher just about everywhere than they are in Lagos.

## 6.5 Concluding remarks: income

The models presented in this section suggest, qualitatively, that social cohesion affects income differently in the rural and non-rural sectors only in the poorest economies. More precisely, the interaction terms between the rural dummy and some indicators of social cohesion have significant estimated coefficients. In India, the interaction between rural status and trust is negative: conditional on living in the rural sector, higher trust is associated with lower income. (Alternatively, for a given level of trust, all else equal, a rural respondent will be poorer.) This is counter-intuitive to the hypothesis, made by Knack and Keefer (1997) and others, that social cohesion is more important in poorer economies, where formal institutions of contract enforcement are weaker. If this hypothesis holds within poor countries — contract enforcement is more dear in rural India or Nigeria than in the urban sectors of those countries — one would expect a positive coefficient. In Nigeria, the interactions between rural status and group activity and between rural status and trust have positive coefficients (only marginally significant in the case of group activity). Conditional on living in the rural sector, greater associational activity or trust is associated with higher income. This is consistent with the Knack-Keefer hypothesis. In higher-income Canada and Romania, none of these interaction terms have significant coefficients, suggesting that social cohesion does not operate differently between the rural and non-rural sectors of those countries.

## 7 Concluding remarks

### 7.1 Questions and extensions

Comparing these four countries raises several problems of interpretation. Notably, it is not clear that rural respondents in each country understood “family members” in the same way, for example. Rural Canadians and perhaps Romanians might take “family” to mean the nuclear unit, while rural Nigerians and Indians might take it to mean the extended kin network. A respondent might look less favourably on these far-flung relations than on her immediate family. These considerations are relevant given the significant finding that rural

Canadians and Romanians are much more trusting of their family, while rural Nigerians and Indians are much less trusting of their family, than their non-rural counterparts. Similarly, the conception of observers in industrialized countries regarding civic organizations likely do not translate well to developing-country settings, and rural settings in particular. Nevertheless, as Narayan and Pritchett (1999) verify for rural Tanzania — among the poorest places in the world today — people are quite active in various types of organizations even there. It's unlikely, however, that too many rural Nigerians are members of “animal rights groups” or “education/cultural groups” in the sense that the survey designers understand those organizations.

Several shortcomings of the data set used in this paper suggest possible extensions of the analysis using other data sources. In particular, it would be useful to have more refined measures of associational activity. Rather than a simple count of organizational types, one could use measures of intensity of commitment to civic organizations, including hours per week devoted to volunteer work, or the share of one's income donated to such organizations. Less formal than membership in a civic organization but equally important to the level of social cohesion are people's investments of time and effort in helping and caring for others — bringing a meal to a sick neighbour or family member, watching small children for a neighbour or family member.<sup>19</sup> Such measures exist for Canada: various waves of the General Social Survey measure time use in various activities and the nature and extent of certain “friends-and-family” relationships; the Survey of Consumer Finance records donations to charities and organizations by households in relation to income and other expenditures. For some developing countries, some versions of the World Bank's Living Standards Measurement Study (LSMS) may provide useful indicators of such activities. The analysis would furthermore benefit from more refined geographical markers for respondents, in light of the marked differences in regional patterns of trust and associational activity evidenced in this paper. All of these extensions can be pursued, but the trade-off, of course, is that these data sources do not have the information on respondents' patterns of trust or attitudes that the WVS provides.

---

<sup>19</sup>On the economic importance of such “invisible” helping and caring labour, see the discussion in Chapter 3 of UNDP (1999).

## 7.2 Summary and discussion

This paper set out to answer two simple questions. First, is there “more” social cohesion in the rural sector? (Or, more generally, do levels of social cohesion differ between rural and non-rural society?) Second, beyond the question of whether there is more or less of it, is social cohesion *different* in rural society? For example, is social capital more or less productive there? I answer these questions for four disparate countries — Romania, Nigeria, India, and Canada — based on data on associational activity and trust from the World Values Survey (wvs 1999).

Several interesting findings emerge. (i) There is a strong positive rural effect on associational activity in Canada. Controlling for other variables, the negative rural effect on associational activity (from simple bivariate comparisons) in Nigeria and Romania disappears. (ii) There is similarly a strong positive rural effect on most dimensions of trust in Canada, and scattered positive rural effects on trust elsewhere. (Rural people have higher trust in fellow nationals in India and Romania, for example). (iii) Rural trust is closely related to parochial sentiment: rural Canadians are less trusting of recent immigrants and speakers of the other language group, while rural Indians are less trusting of Hindus and non-Hindus. (iv) There is surprisingly little evidence of links between associational activity and trust: controlling for other variables, more group and voluntary activity is not a significant predictor of most dimensions of trust. (v) There is evidence that the impact of social cohesion on income behaves differently in the rural sector. In India, conditional on living in the rural sector, higher trust is associated with lower income; while in Nigeria, conditional on living in the rural sector, greater associational activity or trust is associated with higher income. The link between these indicators of social cohesion and income is quantitatively different in the rural sector in those countries.

These questions, and the answers provided in this paper, have policy relevance. The enthusiasm of the World Bank to fund projects that exploit pre-existing stocks of social capital, as well as community-economic-development strategies for historically depressed regions of developing countries, are based on notions that rural people have more social cohesion. If this is true, then this is an asset that can substitute, perhaps for other types of capital;

alternatively, investments in physical or human capital might be more profitable where there is more social cohesion. This paper suggests that the rural economy, in poor countries in particular, is not necessarily embedded in a more cohesive society. Indeed, the social-cohesion advantage of rural society appears to be more pronounced in higher-income and more-industrialized Canada and Romania. This does not mean the development policy should not foster social-capital investment; but neither should it accept as a stylized fact that the rural economy has a higher level of social cohesion upon which to build.

## References

- [1] Bardhan, P.K., Irrigation and cooperation: An empirical analysis of 48 irrigation communities in South India, forthcoming in *Economic Development and Cultural Change*.
- [2] Bowles, S., and H. Gintis, Optimal parochialism: The dynamics of trust and exclusion in networks, mimeo, University of Massachusetts, Amherst, 1998.
- [3] Coate, S., and M. Ravallion, Reciprocity without commitment: Characterization and performance of informal insurance arrangements, *Journal of Development Economics*, 40, 1993, 1-24.
- [4] Cord, L., E. Gacitua-Mario, and Q. Wodon, Social capital and land titling in Mexico's *ejido* sector, Government Programs and Poverty in Mexico Background Paper # 5, The World Bank, 1999.
- [5] Dayton-Johnson, J., Social capital, social cohesion, community: A microeconomic analysis, forthcoming in L. Osberg, ed., *Teams work better: The economics of social cohesion*, University of Toronto Press, Toronto.
- [6] Dayton-Johnson, J., The determinants of collective action on the commons: A model with evidence from Mexico, *Journal of Development Economics*, 62, 2000, 181-208.
- [7] Fafchamps, M., Solidarity networks in preindustrial societies: Rational peasants with a moral economy, *Economic Development and Cultural Change*, 1992, 147-174.
- [8] Friesen, J., Communities and economic prosperity: Exploring the links, forthcoming in L. Osberg, ed., *Teams work better: The economics of social cohesion*, University of Toronto Press, Toronto.
- [9] Granovetter, M., Economic action and social structure: The problem of embeddedness, *American Journal of Sociology*, 91, 1985, 481-510.

- [10] Grootaert, C., Social capital, household welfare and poverty in Indonesia, Local Level Institutions Study, The World Bank, 1999.
- [11] Helliwell, J.F., Do borders matter for social capital? Economic growth and civic culture in US states and Canadian provinces, NBER Working Paper No. 5863, 1996.
- [12] Knack, S., and P. Keefer, Does social capital have an economic payoff?, *Quarterly Journal of Economics*, 112, 1997, 1251–1332.
- [13] La Porta, R., F. López-de-Silanes, A. Shleifer, and R. Vishny, Trust in large organizations, *American Economic Review, AEA Papers and Proceedings*, 87, 1997, 333–338.
- [14] Maluccio, J., L. Haddad and J. May, Social capital and income generation in South Africa, 1993–1998, mimeo, IFPRI and University of Natal–Durban, 1999.
- [15] Narayan, D., and L. Pritchett, Cents and sociability: Household income and social capital in rural Tanzania, *Economic Development and Cultural Change*, 47, 1999, 873–897.
- [16] Olson, M., *The logic of collective action*, Harvard University Press, Cambridge, Mass., 1965.
- [17] Parsons, T., Evolutionary universals in society, *American Sociological Review*, 29, 1964.
- [18] Platteau, J.-P., Traditional systems of social security and hunger insurance: Past achievements and modern challenges, in E. Ahmad, J. Drèze, and A. Sen, eds., *Social security in developing countries*, Clarendon Press, Oxford, 1991.
- [19] Putnam, R., The prosperous community — Social capital and public life, *The American Prospect*, 13, 1993a, 35–42.
- [20] Putnam, R., with R. Leonardi and R. Nanetti, *Making democracy work: Civic traditions in modern Italy*, Princeton University Press, Princeton, N.J., 1993.
- [21] Seabright, P., Is cooperation habit-forming?, in: Partha Dasgupta and Karl-Goran Mäler, eds., *The Environment and emerging development issues*, Clarendon Press, New York, 1997.
- [22] Stanley, D., Hearing secret harmonies: Toward a dynamic model of social cohesion, mimeo, Department of Canadian Heritage, Hull, Québec, 1998.
- [23] SSCSAST [Standing Senate Committee on Social Affairs, Science and Technology], *Final Report on Social Cohesion*, Government of Canada, Ottawa, 1999.
- [24] UNDP [United Nations Development Programme], *Human Development Report 1999*, Oxford University Press for the UNDP, New York, 1999.

- [25] Woolley, F., Social cohesion and voluntary activity: Making connections, forthcoming in L. Osberg, ed., *Teams work better: The economics of social cohesion*, University of Toronto Press, Toronto.
- [26] World Values Study Group, World Values Survey 1981–1984 and 1990–1993 [Computer file]. 2nd ICPSR version. Ann Arbor, MI: Institute for Social Research [producer]; Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 1999.

## DATA APPENDIX

### Canada

The regional dummies correspond to the ten Canadian provinces: the Ontario dummy is omitted from all models so that the estimated coefficients on the remaining regional dummies can be interpreted as the differential effect of that region versus Ontario. Similarly, a set of interactions between the rural dummy and the provincial dummies are included; the rural Ontario dummy serves as the comparison category, and the rural Prince Edward Island dummy is excluded because all PEI respondents were classified as rural. Dummy variables are included for Catholic and Protestant (categories that did not exhaust the sample); and “no religion”, for respondents who so self-identified. Income is coded as a ten-level categorical variable. For the analysis in this paper, I used the midpoint of each category (in thousands of Canadian dollars per year). The categories are as follows: less than \$10,000 per year; \$ 10,000–\$ 14,999; \$ 15,000–\$ 19,999; \$ 20,000–\$ 24,999; \$ 25,000–\$ 29,999; \$ 30,000–\$ 39,999; \$ 40,000–\$ 49,999; \$ 50,000–\$ 59,999; \$ 60,000–\$ 69,999; \$ 70,000 or more. To convert the top category to a dollar figure, I used 1990 Survey of Consumer Finance (SCF) data, which provided the average income, by province, conditional on income being higher than \$ 70,000.<sup>20</sup> Table A1 provides summary statistics specific to the Canadian data.

### India

Although the wvs survey documentation include fourteen regional identifiers, seven are regions with zero respondents. The non-empty regional identifiers are: Bihar, West Bengal, Maharashtra, Uttar Pradesh, Delhi (the omitted comparison category in this paper), Andhra Pradesh, and Kerala. Each of these regional indicators, in turn, is interacted with the rural dummy. Other included dummy variables for India are: Catholic, Protestant, non-religious, Muslim, and Hindu. The Indian income variable is a ten-level categorical variable. The categories are: up to 12,000 rupees per year; 12,001–18,000; 18,001–24,000; 24,001–30,000; 30,001–36,000; 36,001–48,000; 48,001–60,000; 60,001–90,000; 90,001–120,000; over 120,000. I used the midpoint for each level (divided by one thousand); for the highest category, I used 150,000. Table A2 summarizes India-specific variables.

### Nigeria

The religious indicator variables are Catholic, Protestant, Muslim, and “No Religion”. Three ethnic indi-

---

<sup>20</sup>My thanks to Lynn Lethbridge for her help with the SCF figures.

cators are included: Hausa, Yoruba and Igbo. Several regional dummies are included (Jos, Kano, Zaria, Owerri, Ilorin, Minna, Madugari, Ibadan, Benin, Enuou, Makurdi, Kaduna, Abeo Kute, Akure, Port Harcourt and Uyo); the omitted comparison region is Lagos. Each of these regional dummies is interacted with the rural dummy (with the interaction of Lagos and the rural dummy omitted). In the Nigerian data there is no explanation of the income categories in the wvs documentation: all we have is ten categories ranked from “lowest” (1) to “highest” (10). The mean value of this variable is 4.8 for the sample; for rural Nigerians it’s 4.6, while for non-rural Nigerians, it’s 4.9. Table A3 provides summary statistics for the independent variables used in this analysis.

### **Romania**

Income is measured by a ten-level categorical variable. Its interpretation differs from the other national sub-samples. Respondents were asked to subjectively rank their income, ranging from “a much lower level than that of the Romanian population as a whole” (1) to “a much higher level” (10). The mean value of this categorical variable is 4.8; for rural Romanians it’s 4.8, while for non-rural Romanians, it’s 4.7. Religious indicators are included for Catholic, Protestant, and “No Religion”. Regional indicators are Mutenia, Moldova, Transylvania, Oltenia, Banat, Crisana-Maramures, and Dobrovia; the omitted comparison region is Bucharest. Each of these regional dummies is interacted with the rural dummy (with the exception of Bucharest). Table A4 provides summary statistics of the Romanian independent variables used in this paper.