

The Role of Social Capital in Financial Development*

Luigi Guiso

University of Sassari, Ente L. Einaudi & CEPR

Paola Sapienza

Northwestern University & CEPR

Luigi Zingales

University of Chicago, NBER, & CEPR

First Draft: November 20, 1999

This Draft: August 4, 2000

Abstract

To identify the effect of social capital on financial development, we exploit the well-known differences in social capital (Banfield (1958), Putnam (1993)) across different parts of Italy. In areas of the country with high levels of social capital, households invest less in cash and more in stock, use more checks, have higher access to institutional credit, and make less use of informal credit. The effect of social capital is stronger where legal enforcement is weaker and among less-educated people. These results are not driven by omitted environmental variables, since we show that the behavior of movers is still affected by the level of social capital present in the province where they were born.

*We thank Sonia Falconieri, Arvind Krishnamurthy, Owen Lamont, Giancarlo Spagnolo for very helpful comments. We also benefited from the comments of participants to seminars at Northwestern University, Stanford University, University College (London), the Finance Brown Bag lunch at the University of Chicago, University of Florida, University of Maastricht, and 2000 WFA Conference. Luigi Guiso acknowledges financial support from MURST, the Italian Ministry of Universities and Scientific Research. Luigi Zingales acknowledges financial support from the Center for Research on Security Prices at the University of Chicago.

In 1958 when Banfield wrote “The Moral Basis of a Backward Society”, few economists noticed. His thesis that the underdevelopment of Southern Italy was due to the lack of social trust outside the strict family circle (which he labeled “amoral familism”) was hard to reconcile with the economic models prevailing at that time. Forty years later, however, developments in economic theory allow us to appreciate the intrinsic limitations agents face in contracting and the potential role social capital can play in reducing the deadweight loss generated by these limitations.

For this reason, the work of Putnam (1993) and Fukuyama (1995) has captured the attention of several economists. La Porta et al. (1997a), for example, document a remarkable correlation between the trust prevailing in a country and the presence of large organizations. Similarly, Knack and Keefer (1996) find a correlation between a country’s level of trust and its rate of growth. Finally, Knack and Zak (1999) show that this correlation exists even after controlling for quality of law enforcement.

The skeptics, however, could still object. First, people’s trust may be the result not only of the social capital present in their community, but also of prompt law enforcement. Second, the theoretical link between social capital and growth is very indirect (e.g., Solow (1995)). Even Putnam (1993) admits that the mechanisms through which “the norms and network of the civic community contribute to economic prosperity” should be investigated further.

In this paper we take Putnam’s suggestion seriously and investigate the link between the level of social capital and one important factor underlying economic prosperity: financial development. One of the mechanisms through which social capital impacts economic efficiency is by enhancing the prevailing level of trust. In high social capital communities, people may trust each other more because community’s networks provide better opportunity to punish deviants (Coleman (1990), Spagnolo (1999)). At the same time, in high social capital communities people may rely more on others keeping their promises as a result of a moral attitude imprinted with education (Banfield (1958)). Since financial contracts are trust intensive contracts *par excellence*, social capital should have major effects on the development of financial markets. In fact, financing is nothing but an exchange of a sum of money today for a promise to return more money in the future. Whether such an exchange will

take place depends upon not only the legal enforceability of contracts, but also the extent the financier trusts the financee. Since social capital is an important determinant of the level of trust, it should also affect the level of financial development. Documenting this link can not only shed some light on the mechanism through which social capital contributes to economic prosperity, but also provide a new explanation for the widely different levels of financial development across countries.

Unfortunately, as for the level of growth, the use and availability of financial contracts across countries is affected by many other institutional factors, difficult to control for in a regression (Mankiw (1995)). Thus, one would like to investigate the relation between social capital and financial development within a country, so to maintain constant any institutional difference. In general, however, there is very little variation in social capital within a country.

A noticeable exception is Italy. In spite of having been a unified country for the last 140 years, with common legal, administrative, judiciary, regulatory, and tax systems, Italy is characterized by wide differences in the level of social capital between its Northern and Southern regions. In fact, Italy is the country where sociologists first turned to study the effects of trust and social capital (Banfield (1958), Putnam (1993)).

In this paper we exploit this within-country variation to identify the effects of social capital on the use and availability of financial contracts as reported by the Italian Survey on Households Income and Wealth (SHIW). This dataset contains information on portfolio decisions, use of various financial contracts, as well as detailed geographical and individual characteristics for a sample of 32,700 households.

Sociologists and political scientists (e.g., Putnam (1993)) have measured social capital with indicators of civicness, such as electoral turnout, participation in groups and associations, and level of charity. Since we are interested in measuring people's propensity to cooperate for reasons other than standard economic incentives, we focus on the two measures of civicness that are hardest to explain with self-interested agents: electoral participation and blood donation.

Using a variety of specifications and samples, and controlling for various individual and geographical characteristics, we study the effect of social capital on households' portfolio

allocation and use of checks, availability of loans, and reliance on informal lending.

Consistent with social capital being important, we find that in areas characterized by high levels of social capital, households invest a smaller proportion of their financial wealth in cash and a bigger proportion in stock. This result is true even after controlling for a large set of households' characteristics and some other environmental variables, such as quality of legal enforcement and per capita Gross Domestic Product (GDP). In social capital intensive areas, households are also more likely to use personal checks, and to obtain credit when they demand it. These results are not driven by omitted environmental variables, since we show that the behavior of movers is still affected by the level of social capital present in the province of birth.

Consistent with Banfield's and Fukuyama's claim that low social capital areas are often characterized by more intense reliance on transactions within narrow subgroups, such as families and friends, we find that the likelihood of receiving a loan from a relative or a close friend is decreasing in the level of social capital prevailing in the area.

To gain confidence on the causal nature of these correlations, we explore whether the magnitude of the impact of social capital varies according to what theory predicts. Consistent with theory, we find that the effect of social capital is stronger when legal enforcement is weaker. Similarly, the effect of social capital is more pronounced among less-educated people, who need to rely more on trust because of their limited understanding of contracting mechanisms.

These results, if confirmed in other environments, have very strong implications for developing countries. Social capital seems to matter the most when education levels are low and law enforcement is weak: this is precisely the status of many developing countries.

We also try to shed some light on the mechanism through which social capital generates the trust needed for financial transactions. If trust is an equilibrium outcome of a society where non-legal mechanisms force people to behave cooperatively (e.g. Coleman (1990) and Spagnolo (1999)), each individual should have a level of trust that depends on the opportunity he has to retaliate. Since the opportunity to retaliate is driven by the level of social interactions, an individual should reflect the level of social capital of the area in

which he lives, regardless of the one in which he was born. On the other hand, if trust is a moral attitude imprinted with education (e.g. Banfield (1958), and Fukuyama (1995)) an individual should retain the level of social capital typical of the place where he grew up, which we capture with the province of birth. We try to distinguish between these two interpretations by focusing on the households that moved. For those, it is possible to separately identify the effect of the environment they grew up in and the environment where they live.

We find that most of the effect is due to the level of social capital prevailing in the area where an individual lives. But a significant fraction (roughly a third) of the effect is due to the level of social capital prevailing in the area where he was born. Thus, both the channel emphasized by Coleman and Banfield are important.

Besides the above-mentioned literature on trust and social capital, our work is most closely related to a growing number of studies of the effects of local interaction on criminal behavior (Case and Katz (1991), Glaeser, Sacerdote, and Scheinkman (1996)) and on shirking (Ichino and Maggi (1999)). Interestingly, the Italian regions where Ichino and Maggi (1999) find the highest level of shirking are those with the lowest levels of social capital. In this context our study can be considered as an attempt to estimate the positive (rather than the negative) spillover of social interaction and investigate how they depend on the institutional characteristics (legal environment) and personal characteristics (education).

The rest of the paper proceeds as follows. Section I discusses the notion of social capital and its measures. Section II describes the data. Section III discusses the hypotheses we will test. Section IV presents the results of the effect of social capital on the use and availability of financial contracts. Section V explores when social capital is more important, while Section VI tries to uncover why does social capital matter by separating the effect of the social capital of the province of residence from the social capital of the province of birth. Conclusions follow.

I The Concept of Social Capital

A What Is Social Capital?

There is a growing literature in sociology and political science that has converged on the concept of social capital as a comprehensive explanation for why some communities are able to resolve collective problems cooperatively while others are unable to bring people together for common purposes. Several important contributions (Coleman (1990), Fukuyama (1995) and Putnam (1993)) have established that the extent people participate in social activities differs strikingly across regions/countries with important institutional and economic consequences: better functioning institutions, bigger firms, higher economic growth. In this literature, social capital is broadly defined as neighborhood networks and “feature of social life - networks, norms, and trust - that enable participants to act together more effectively to pursue shared objectives” (Putnam (1990)).

While there is a growing consensus on the importance of social capital, different authors disagree on the precise nature of social capital and the way it affects the behavior of individuals. Most of the sociological literature sees the behavior of the individuals as “consummatory” because it is based on strongly internalized norms of behavior. These internalized norms can be engendered through socialization in childhood (Bansfield (1958)). Social capital is then a set of social norms imprinted with education, that affects individuals’ behavior and their interaction with others. Alternatively, some contributions to the literature have attempted to ground a theory of social capital in a rational-actor, utility-maximizing model. According to this view, the behavior of individuals is based on norms, but norms that are less deeply internalized: social capital affects the behavior of individuals because it enhances the level of social punishment of a society. For example, Coleman (1990) defines social capital as the extent and completeness of horizontal relations within a community and its role is to enhance the power and efficient allocation of social sanctions. Social capital is thus identified with a society enforcement power (see also Spagnolo (1999)). For most of the paper we do not try to distinguish between these two interpretations, since they have similar predictions.

B How Do We Measure Social Capital?

In his critique to Fukuyama Solow writes “if ‘social capital’ is to be more than a buzzword, something more than mere relevance or even importance is required. Those cultural and social formations should be closely analogous to a stock or inventory, capable of being characterized as larger or smaller than another such stock. ... The stock of social capital should somehow be measurable, even inexactly.”

Measuring social capital is indeed a daunting task, substantially more complicated than measuring physical or human capital (themselves not trivial tasks). Similar to human capital, social capital has several aspects and each measure is bound to capture only some.

Consistently, sociologists measure social capital with a combination of variables (e.g. Putnam (1993)): participation in associations, electoral turnout, newspaper readership, and other measures of civicness (such as non littering, charity giving). All these variables have a common aspect: they indicate a level of caring about the social community, which lead to the formation of those social networks that at the very core of the concept of social capital.

Among those variables we were able to get consistent data at the province level only for electoral turnout, which will be our main measure of social capital. One of the advantages of this variable is that is measured on the entire population without any sampling error. To complement this measure and test the robustness of our results, we introduce a second measure of social capital: voluntary blood donations. Since these donations are anonymous and not compensated they represent a good proxy for how much a community internalizes the social good.

Another advantage of both these measures is that they rely on purely “altruistic” behavior. As such they are the least likely to be generated by some other economic motivations which may have some spurious effects. For example, newspaper readership is a proxy not only for civicness but also for the level of sophistication of a community. This makes it harder to separate the effect of civicness from that of sophistication.

C Social Capital and Financial Development

The level of social capital of a community enhances the level of interpersonal trust. This is obviously the case if social capital is, as in Bansfield (1958), the result of moral values imprinted with education. But it is also the case if social capital measures the existence of social networks, which increase the effectiveness of social sanctions. In this case trust is the equilibrium outcome of a society when non-legal mechanism force people to behave cooperatively (Coleman (1990) and Spagnolo (1999)). Indeed, using the General Social Survey data from 1972 to 1994, Brehm and Rahn (1997) find that "the more that citizens participate in their communities, the more that they learn to trust others".

Financing is nothing but an exchange of a sum of money today for a promise to return more money in the future. Whether such an exchange will take place depends upon not only the enforceability of contracts, but also the extent the financier trusts the financee. In fact, financial contracts are trust intensive contracts *par excellence*.

Thus, if trust matters for financial development one should also find that financial development is correlated with measures of social capital. Our empirical approach follows this idea.

An alternative strategy, more similar to the one adopted in the growth literature, would be simply to obtain direct indicators of the attitude of individuals in a community to trust others, such as those collected in the World Values Survey, and correlate them with measures of the community financial development. There is, however, a problem with this approach. By measuring trust directly we would be unable to differentiate the effect of social capital from that of legal enforcement. People may trust each other only for fear of legal punishment. If this were the case, then the effect of trust would simply be a reinterpretation of the role played by legal enforcement. We bypass this problem by going directly to the sources of trust, using measures of social capital that are unlikely to be driven by differences across provinces in the degree of legal enforcement.

II The Data

A Measures of Social capital

Our primary measure of social capital is the electoral turnout at the province level. Since in Italy citizens are required by the law to vote in general elections we restrict our attention to referenda where vote is not mandatory.

The first referendum, on the choice between Republic and Monarchy, took place in 1946. Our measures of use and availability of financial contracts are collected starting in 1989. Hence we measure voter turnout for all the referenda occurred in Italy between 1946 and 1989.

These referenda in Italy covered a very broad set of issues such as divorce (1974), abortion (1981), hunting regulation (1987), use of nuclear power (1987), public order measures (1978, 1981), wage indexation (1985).¹

As Table 1 shows Italy exhibits a very high average turnout (80%). What is relevant for this study, however, is the cross sectional variability, which is substantial. Turnout goes from 62% to 92% with one quarter of the observations below 72% and one quarter above 86%.

To complement this measure and test the robustness of our results, we introduce a second measure of social capital: voluntary blood donations. We obtain the data from AVIS, the Italian association of voluntary blood donors, which collects over 90% of the whole blood donations and 100% of anonymous blood donations in Italy (see the data appendix for more details about AVIS). All the blood collected is handed over freely to the public hospitals and beneficiaries remain anonymous both to the donors and to the association. We use the number of blood bags per inhabitant in the province collected in 1995, the only year for which we have complete data at the province level. Each bag contains about 16oz of blood.²

As Table 1 shows the average level of donation is 3 bags per hundred people. As for the other measure of social capital there is high cross sectional variability. While some provinces

¹In a previous version of this paper we used voter turnout in European elections, as well. Our results were qualitatively and quantitatively similar to the ones presented in this paper.

²An alternative measure would be the number of AVIS members in a province per inhabitant. Thought our results do not depend on the measure used, the one selected better reflects the intensity of blood donations.

have zero donation per inhabitant, others go as high as 11 bags per hundred people.

B Measures of Use and Availability of Financial Instruments

Our data on households is drawn from the Survey of Households Income and Wealth (SHIW). This survey, which is conducted by the Bank of Italy on a representative sample of about 8,000 households, collects detailed information on Italian household income, consumption, and wealth as well as their portfolio allocation across financial instruments and their access to formal and informal credit. For each household, the data also contain information on characteristics of the households' head, such as education, age, place of birth, and residence.

One of the unique features of this survey is its ability to distinguish between households that did not want a loan from households that did not succeed in obtaining a loan because they were either turned down or did not apply because they expected to be turned down. The survey also reveals the existence of informal credit (i.e., credit extended by friends and family). A more detailed description of the dataset, with the actual questions asked to the people interviewed, is contained in the Appendix.

This survey is conducted every two years. Since the last four (1989-1995) have maintained the same structure, we pool them together, obtaining a sample of 32,686 observations. The survey has a rotating panel component, thus 9,287 of these observations come from the same household re-interviewed in a different year. In the analysis we will check the robustness of our results to eliminating these repeated observations. Excluding a few households reporting negative consumption and/or income (17 observations), 4 observations with all missing values and 48 observations reporting age above 90 or other inconsistent data, the sample contains 32,617 households if repeated observations are included, or 23,330 households if repeated observations are excluded.

Table 1 reports summary statistics for all the measures of use and availability of financial instruments, which will appear as dependent variables in our regressions. The first one is the proportion of financial wealth a household retains in cash. All the observations are equally weighted, thus the mean (24%) is distorted by the fact that poorer people retain 100% of their financial wealth in cash. A value weighted average gives a more reasonable 2.4%. This

feature highlights the importance of controlling for the level of wealth (and its square to capture possible non-linearities) in any regression.

The second measure is the proportion of financial wealth a household detains in deposits, both bank and postal (which in Italy are very important). Deposits represent the main savings instrument for the households in the sample.

The third measure is the fraction of financial wealth retained in stock. The low mean (3%) is consistent with the limited role played by the stock market in Italy (e.g., Pagano, Panetta, and Zingales (1998)). The fourth measure is an indicator variable of whether a household uses checks. Interestingly, half of the households interviewed do not use checks.

The next variable pertain to a household's ability to access the credit market. "Discouraged or turned down" is an indicator variable equal to one if a household responds positively to at least one of the following questions: "During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?", "During the year did you or a member of the household apply for a loan or a mortgage from a bank or other financial intermediary and your application was turned down?". 2% of the sample households were discouraged from borrowing (i.e. answered yes to the first question), while 1% of the sample households were turned down (i.e. answered yes to the second question). Finally, "family loan" is an indicator variable equal to one if a household responds positively to the question: "As of the end of the year did you have debts outstanding towards friends or relatives not living with you?". 3% of the sample households received such loans.

C Environmental variables

We further augment our household-level with three other variables. The first is a measure of economic development, measured by GDP per capita in the province. This measure is released by the National Institute of Statistics (ISTAT) and exhibits wide variations, with values ranging from 11 million liras to 72 million liras (between \$6,000 and \$40,000 per

capita.³ Note that inserting this control will underestimate the effect of social capital. In fact, as Putnam shows, social capital, far from being a consequence of economic modernization, is a precondition of it. Thus, some of the effect of social capital will be reflected in the level of income per capita.⁴

The second variable is a novel measure of the inefficiency of law enforcement: the average number of years it takes to complete a first-degree trial in the courts located in the province. This measure is computed using data on the length of trials released by the Ministry of Justice. As Table 1 indicates, there is wide variation in this measure, ranging from 1.4 to 8.3 years, with a mean of 3.6 and a standard deviation of 1.25.

Finally, we know the province where the household currently resides. Accordingly, we merge the household dataset with our measures of social capital and attach to each household the measures of social capital in the province where it is located. In addition, we also know the province where the household head was born. We use this as a proxy for the area in which an individual was raised, and for the level of social capital prevailing there (which we label social capital of origin).

III Theoretical Predictions

Financial contracts require trust: trust that the counterpart will fulfill the letter of the contract, and that he will not breach the fiduciary duty associated with it. This trust can arise from the expectation that legal enforcement will punish any deviation.

Legal enforcement, however, is expensive and sometimes ineffective. Legal enforcement can do very little against outright fraud: if the financee squanders the money the law can at best put him in prison, but not recover it. Even when effective, legal enforcement can be so costly to jeopardize the economic viability of a financial contract. Finally, contracts are intrinsically incomplete, making it impossible, even for the most effective court system to fully guarantee the investor.

³We use an exchange rate of \$ 1 = Lit 1,800.

⁴Consistent with this interpretation, the impact of social capital becomes larger and more statistically significant when we omit GDP per capita from the regressions.

Since the legal enforcement can never be fully effective, social capital, according to both definitions, can play a role in enhancing the level of trust. If social capital is the degree of social interaction (Coleman (1990)), then it affects the opportunity to inflict a social sanction to deviants. For example, a broker who defrauded his clients may be ostracized by his community. This provides a non-legal mean of enforcement that can complement legal enforcement whenever this is ineffective or too expensive.

Higher level of social capital will be associated with higher level of trust, even when social capital reflects the moral attitudes of a community (e.g. Banfield, 1958, and Fukuyama, 1995). According to this definition, the members of high social capital communities are more likely to trust each other, because they expect other members to behave according to the community norms.

In what follows we identify the link between the level of social capital and the use and availability of some basic financial contracts for which we have data.

A Portfolio Allocation

In allocating their financial wealth all the households face a fundamental choice between holding cash and investing in different financial instruments. Any form of investment requires some sort of delegation. An household investing in deposits delegates the custody and management of his money to the bank. Investment in stocks requires even two layer of delegation. The household has to delegate a broker to buy and hold his security, and at the same time has to delegate the firm to manage and invest the money in his best interest.

Since the willingness to delegate is affected by the level of trust, then individuals living in high social capital areas will be more prone to delegate the custody and management of their money to a third party. Thus, *ceteris paribus*, we expect that households living in high social capital areas invest a larger fraction of their financial wealth in deposits and stocks and retain a smaller fraction in cash.

B Use of Checks

The use of personal checks is clearly an activity that requires a lot of trust. In fact, trust is needed from both sides. The person receiving the check has to trust that the issuer has enough funds in the bank to honor the payment. On the other hand, the person issuing the check has to trust the receiver not to falsify the amount written on the check. Furthermore, if the check is mailed, the issuer has to trust that the check will not be stolen in the mail and cashed by a different person. This is not an unusual event in Italy, so much so that it influences people's willingness to use checks. For example, one of the authors was very hesitant to purchase mutual funds via a check in the United States, for fear the check might be stolen.

Thus, we should expect that *ceteris paribus* households living in low social capital areas are less likely to use checks.

C Lending

Lending is also a trust intensive activity. Thus, we expect that the supply of loans to households is positively affected by the average level of social capital in the province.

Fortunately, the data allows us to separate demand and supply. We have the information on whether the respondent requested a loan and was turned down or was discouraged from applying. Thus, a higher level of social capital should decrease the probability a household is denied credit or is discouraged from applying.

D Loans by Friends and Family

One interesting feature of our dataset is that it contains also information on informal lending: loans by relatives and friends. How do we expect them to vary with the degree of social capital?

As for any type of lending, a higher level of trust should lead to more lending. In this case, however, there are three forces pushing in the opposite direction. First, informal lending is a substitute for formal lending, when the latter is either unavailable or too expensive. As we

argued above, the access to formal lending is jeopardized by lack of social capital. Thus, the demand for loans from friends and family increases in areas with low social capital. Since for these informal loans we do not separately observe the demand and supply, but simply their existence, it is possible that the demand effect dominates and that the likelihood of loans by friends and family is higher in areas with low social capital.

Second, there might be a substitution effect on the supply of loans. In low social capital areas, the group with the highest comparative advantage in undertaking trust intensive activities (such as lending) is a group with a comparatively high level of trust (such as friends and family).

Finally, many authors (Banfield (1958), Fukuyama (1995)) have emphasized that low levels of trust toward others are generally associated with high levels of trust within subgroups, such as the family. The term “amoral familism” coined by Banfield signifies the existence of very high levels of trust within the family, and very low levels outside of it. This leads naturally to move transactions from the market to the restricted family circle.

Given the importance of these three factors, we should expect a higher incidence of loans by friends and family in low social capital areas (thus a negative correlation between the likelihood of informal loans and the level of social capital).

E When Does Social Capital Matter More?

So far we have implicitly assumed that the social capital is equally important in fostering trust regardless of other environmental and individual characteristics.

However, the importance of social capital in enhancing trust is bound to be larger in areas where law enforcement is not prompt. If it takes more than three years to enforce a contract (as is the case in Italy), the willingness to finance a person will depend even more crucially on the possibility of imposing moral sanctions and/or the existence of moral norms in a given community. This suggests that on average we should expect a bigger effect of social capital on financial development in Italy than in countries like Sweden or the United States where law enforcement is more efficient. More importantly, the above reasoning suggests that cross-sectionally we should expect a higher marginal effect of social capital in parts of

Italy where law enforcement is comparatively worse.

The extent to which a financial transaction needs trust should also depend on the level of education of the individuals involved in the transaction. Compare two investors considering buying a stock: an educated investor, who can read and understand the fine print of a financial prospectus, and an unsophisticated one, who cannot understand most of the terms. The latter clearly requires greater trust to buy the same stock, all other things being equal. The inability to fully grasp all the details of the contract involved make it impossible for the unsophisticated investor to discriminate between legitimate investments and frauds. At the same time, lacking the understanding of the legal protections offered, the unsophisticated investor would be more suspicious in general. Finally, if an investor is not endowed with the necessary ability or information to make sophisticated financial decisions (e.g. managing his portfolio) he needs to delegate this function to somebody else. For all these reasons, the unsophisticated investor will require more trust to enter into a financial contract. The prediction, then, is that the marginal impact of social capital on the use of financial contracts is higher among uneducated people than among educated people.

F Why Does Social Capital Matter?

By looking at the behavior of movers we can try to disentangle the channel through which social capital affects individuals' behavior. If social capital reflects the opportunity to inflict a social sanction, individuals should act according to the level of social capital of the area in which they live, regardless of the one in which they were born. Alternatively, if social capital reflects moral norms imprinted with education, the behavior of an individual should be affected by the level of social capital typical of the place where he grew up. These effects cannot be separated for people who were born and live in the same place. But the existence of several movers in our sample provides us with the opportunity to try and distinguish between these two hypotheses.

Interestingly, the relative importance of the social capital of the place of origin and of residence should not necessarily be the same for all the financial contracts we study. Some (like access to loans) depend on how social capital (via trust) affects the behavior of the loan

officer, while others (like the investment in stock) depend on how social capital affects the behavior of the investor.

IV Empirical Results

A Investment in Cash

Tables 2A and B report the results of the effect of social capital on the amount of cash held by a household. The proportion of financial wealth retained in cash is regressed on the level of social capital, the level of judicial efficiency (linear and squared), the GDP per capita, several household characteristics, and three calendar year dummies. Since all the three variables of interest are measured at the province level, we correct the standard errors for clustering at the provincial level.

The household's specific variables (coefficient not reported) are household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head's age (linear and squared), his/her education (number of years of schooling), and indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has.

Column I reports the tobit estimates of the basic specification. As expected, the level of social capital has a negative and highly statistically significant coefficient on the proportion of wealth a household invests in cash. A one standard deviation increase in social capital reduces the amount of cash by 7 percentage points: a reduction of almost a third in the amount of cash held.⁵

To rule out the possibility that social capital is capturing the efficiency of the legal system, in all the regressions we controlled for a measure of the quality of the court system. The degree of judicial inefficiency has a non-linear effect on the amount retained in cash. This

⁵Since the determinants of cash holding may be different across different income and wealth levels, we estimate the same specification for different quartiles of income and wealth. Social capital has always a negative and statistically significant effect on cash holdings and the magnitude of the effect is monotonically decreasing across quartiles.

non-linearity, which is present in most specifications, is consistent with the role played by courts. At low levels of inefficiency, small variations can have a large impact on portfolio choices. But beyond a certain point, legal enforcement becomes inframarginal and a further increase in the degree of judicial inefficiency has very little impact.

The level of per capita GDP has a negative and statistically significant effect on the amount retained in cash. Since other studies (Knack and Keefer (1996), Zak and Knack (1999)) have shown that the level of social capital is positively correlated with economic development, the per capita GDP might absorb some of the effect of social capital. Nevertheless, we think it is necessary to insert it into the regression to control for factors that are associated with financial development, but have nothing to do with social capital. Consistent with our prior, excluding per capita GDP from the regression (not reported) increases both the size of the coefficient of social capital and its statistical significance.

One might object that this result may be due to the higher presence of organized crime in areas with low social capital. Individuals involved in criminal activities prefer to retain wealth in cash to be less visible. This objection, however, ignores the fact that the data comes from personal interviews conducted by the Bank of Italy. Thus, it is highly unlikely that an organized crime participant would agree to answer these questions. Another possibility is that households retain their financial wealth in cash to hide it from tax investigations. Even in this case it would be surprising that the same people would be willing to reveal this information to the Bank of Italy, which is a Government institution. Most likely they would refuse to participate in the survey or, if they participate, to under-report the amount of cash holdings. However, to rule out the possibility that tax evasion is driving our results we run the same regressions excluding self-employed workers (income underreporting is easier and thus more widespread among self employed workers). The results (not reported) are unchanged.

Geographically, one can distinguish Italy in three areas: North (north of the Appennine Mountains), Center (between the Appennine and Rome), and South (south of Rome). In the work of Banfield (1958) and Putnam (1993), the South of Italy is the prototypical area deficient in social capital, while the North is richer. Ichino and Maggi (1999) support this

view by showing that the degree of shirking of the employees of the same bank is significantly higher in the South even controlling for several characteristics of the employees as well as those of the individual branches. Consistent with these findings, the North-South indicator variables turn out to be highly correlated with social capital. The correlation between the North indicator and our measure of social capital is 60%, while there is a negative correlation of 88% between the South indicator and social capital. This might generate the suspicion that the effect we are capturing is due to some other differences between the North and the South of Italy, which happen to be correlated with our measure of social capital. Column II of Table 2 shows that this is not the case. After controlling for the North and South indicator variables, social capital still has a negative and statistically significant effect on the proportion of wealth retained in cash.

Since the level of GDP per capita is an imperfect measure of economic development, we re-estimated (not reported) the same specification inserting other controls for economic development such as the proportion of households owning a dishwasher, a personal computer, a cellular phone. In all the cases, both the level and the statistical significance of the effect of social capital remain unchanged.

Another possible concern is that our measure of judicial inefficiency is an imperfect proxy for law enforcement. To complement this measure we control for the level of crime (number of violent crimes divided by the population).⁶ The estimated effect of social capital (not reported) is 30% lower, but still highly statistically significant.

All these attempts, however, do not completely eliminate the suspicion that some environmental variables other than social capital might be driving the results. For example, the level of social capital may be capturing background risk (Kimball (1993)). The only way to rule this out would be to estimate a model with fixed provincial effects, which absorb all the factors that vary only at provincial level.⁷ Unfortunately, these fixed effects would also absorb our measure of social capital.

Therefore, in order to identify the effect of social capital, we resort to the social capital

⁶We restrict our attention to violent crimes to minimize the effect of sample selection in reporting

⁷We will deal with background risk more specifically in the next paragraph.

of origin, i.e., the level of social capital prevailing in the province where an individual was born. If social capital is “the product of preexisting communities of shared moral codes or values” (Fukuyama, 1995), it might be assimilated with education in the early years of one’s life. In such a case the level of social capital an individual has vis-à-vis the rest of the world might be accurately reflected by the social capital prevailing in the province where he was born. For all the people who are not resident in the province of birth, this measure of social capital is not collinear with the province fixed effect. Thus, we estimate a linear model with province fixed effects and the social capital of origin (plus the usual control variables). The social capital of origin has a negative and statistically significant effect on the level of wealth invested in cash and this effect cannot be attributed to omitted variables at the local level.

One possible critique to our fixed effect estimates is that the results may be driven entirely by movers born in areas with very low levels of social capital. To make sure that the effect of social capital is not driven by a few individuals, we re-estimate the fixed effect model considering only movers relocating from areas with high social capital to areas with low social capital. All results (not reported) remain the same.

Thus far, we have checked the robustness of our results for different controls for environmental variables. We now check the robustness with respect to different definitions of social capital by substituting electoral turnout with blood donation. Also this measure of social capital has a negative and statistically significant effect on the level of cash holdings. One standard deviation increase in the level of blood donation decreases the level of cash holdings by 3.7 percentage points, which corresponds to 15 percent of the sample average.

A final concern is that the sample we use contains some repeated observations. While the level of wealth invested in cash changes over time, the residuals might be correlated across observations of the same individual. Since the cross-sectional correlation in the residuals is confined to only a subset of the observations, and among these, to pairs of observations, this is unlikely to be a problem. But rather than speculate, in Table 2B we re-estimate all the regressions restricting the sample to the first observation of every household. As expected, the standard errors are slightly bigger. But all the results remain the same.

B Investment in Deposits

Table 3 repeats the same regressions of Table 2 with the proportion of financial wealth invested in deposits as a dependent variable. The proportion of financial wealth held in deposits increases in social capital and this effect is statistically significant.

As for cash holdings we test the robustness of our results to the insertion of a dummy for north and south (see column II), for other measures of economic development (not reported), and for other measures of judicial inefficiency (not reported). In all the cases the effect remains statistically significant.

As Column III shows, social capital of origin still has a positive and statistically significant effect on the proportion of wealth held in deposits.

The effect is also present and statistically significant when we substitute use blood donation as a measure of social capital (column IV).

C Investment in Stock

Table 4 estimates the effect of social capital on the proportion of financial wealth invested in stock. As predicted, the effect is positive and statistically significant. This is also true when we control for North and South (column II), for other environmental factors (not reported) and when we use blood donation as a measure of social capital (column IV).

Also the social capital of origin has a strong positive effect on the proportion of financial wealth invested in stock, even after controlling for fixed province effects (column III). The impact is also economically meaningful. A one-standard deviation increase in social capital leads to an increase of 14 percentage points in the proportion of wealth invested in stock – 4.8 times the mean.

There are two concerns with our specification. The first is that portfolio allocations are affected by the individual level of risk aversion and it may be possible that our social capital measures are in fact capturing it. Fortunately, the 1995 survey makes an attempt to elicit attitudes towards risk: each survey participant is offered a hypothetical lottery and is asked to report the maximum price that he would be willing to pay in order to participate. By using

the responses to the question we are able to construct an Arrow-Pratt measure of absolute risk aversion for 4,301 households. We thus re-estimated our basic regressions for cash, deposits and stocks on this sub-sample including among the regressors the inverse of a measure of relative risk aversion, as implied by the solution of a standard portfolio problem (Merton 1971). We compute the relative risk aversion by multiplying the absolute risk aversion and the level of household's consumption. In all three specifications, the coefficients of social capital preserve the same signs and are still statistically significant, in spite of the smaller sample.⁸

The second concern is that social capital, as mentioned earlier, may be capturing differences in consumers exposure to uninsurable sources of uncertainty (background risk) which make them less willing to buy risky assets. To address this potential problem we use a section of the survey that collects data on the subjective probability distribution of future earnings: in the 1995 survey for half of the sampled households each household member of working age is asked to report his subjective assessment of the probability that he/she will lose his/her job (if employed) or find one (if unemployed) in the following twelve months. Conditional on being employed he/she is then asked to report the minimum and maximum earnings and the probability that earnings will fall below the mid-point of this range. Following Guiso, Jappelli and Pistaferri (1998) we use this information, referred to the household head and available for 1,916 households, to compute a measure of expected earnings and their variance. We then re-estimate our regressions for cash, deposits, and stocks adding these variables scaled by total financial assets. As predicted by theory, earnings variance has a negative effect on the demand for stock and a positive one on that for deposits. More importantly for our analysis, in all cases the sign and significance of the coefficient of social capital is unaffected, indicating that it does not reflect omitted measures of background risk.

In sum, the regressions confirm our predictions of the relation between social capital and portfolio allocation in cash, deposits, and stocks. These results cannot be attributed

⁸As further evidence that the coefficient of social capital is not capturing risk aversion, we found that the correlation of social capital and our measure of absolute risk aversion is negative, as one would expect, but extremely low (-.03). Also, in a regression of the logarithm of absolute risk aversion on the logarithm of consumption and social capital, the latter carries a small negative coefficient but is statistically insignificant.

to omitted variables at the local level and do not seem to be attributable to a spurious correlation of social capital with risk aversion or background risk.

D Use of Checks

Another indicator of the use of financial instruments is the reliance on checks to clear transactions. Table 5 reports the probit estimates of the effect of social capital on the probability a household uses checks (recall that almost half of the sample does not).

As the table shows, social capital increases the probability of using checks, and this effect is statistically significant at the 1% level. The reported coefficients are the effect of a marginal change in the corresponding regressor on the probability of writing checks. Thus, we can easily compute the impact of a one standard deviation increase in social capital: it leads to a 12% increase in the probability of using a check. Per capita GDP also has a positive impact on the probability of using checks. This effect, which is highly significant, also captures some of the relation between social capital and use of checks. Finally, as to be expected, in areas where courts are more inefficient, households use less checks, but this effect is not statistically significant. It is well possible that the cost of a legal procedure (relatively to the size of the check) to recover the money from a bad check is so large everywhere that differences in the level of legal enforcement become unimportant.

A household can write a check only if it owns a checking account. On the other hand, the reluctance in using checks and the lack of acceptance of personal checks undermine the main reason to hold a checking account, i.e., being able to write checks. Thus, we think it is correct not to restrict the sample to households that hold a checking account. At the same time, we saw in Table 3 that the decision to hold an account in general is influenced by the level of social capital, thus we want to be able to distinguish the effect of social capital on check writing from the effect of social capital on deposits.

For this reason, in column II the sample is restricted to households that own a checking account. The size of the coefficient of social capital is halved, but it is still positive and statistically significant (at the 10% level). Thus, there is an independent effect of social capital on check writing.

As for cash holdings we test the robustness of our results to the insertion of a dummy for north and south (see column III), for other measures of economic development (not reported), and for other measures of judicial inefficiency (not reported). Controlling for North and South indicators, social capital still has a positive effect on the probability of writing a check, but this effect is not statistically significant. In all the other cases the effect remains statistically significant.

In the linear probability model the social capital of origin is positive and highly statistically significant. This is interesting not only because it reassures us of the non spurious nature of the results, but also because it sheds some light on the mechanism through which social capital can work. In fact, the social capital of origin affects the level of trust of the household writing the check, but most likely not the level of trust of the people accepting checks. Thus, the results in column IV suggest that the lack of trust in others not forging or stealing a check plays an important role. Alternatively, one can interpret this result as saying that indigenous populations do not accept checks from people coming from areas with low social capital. This is a rational response if our measure of social capital reflects trustworthiness, as found by Glaeser et al. (1999). Finally, we cannot rule out pure discrimination. Since most movers are southern, it may be the case that they tend to use less checks, not (only) because they come from areas with low social capital (and thus they do not trust other people), but also because other people in their province of residence are not willing to accept their checks.

Social capital measured by blood donation has a negative and statistically significant effect on the probability of using checks (column V). One standard deviation increase in the level of blood donation decreases the probability of using checks by 5 percentage points, which corresponds to 9 percent of the sample average.

E Availability of Credit to Consumers

Table 6 reports the results of the effect of social capital on the availability of loans to households. We estimate a probit model of the effect of social capital on the probability of being

a discouraged or turned-down borrower, conditional on applying for a loan.⁹

As the table shows, social capital has a negative effect on the probability of not having access to credit. This effect is statistically significant at the 1% level. The reported coefficients in Table 6 show that a one standard deviation increase in social capital leads to a 0.47% decrease in the probability of being discouraged or turned down. This corresponds to a 15% decrease in the sample average probability of being a discouraged or turned down borrower.

To isolate the impact of social capital from other differences between North and South we estimate the same regression, controlling for the North and South indicators (column II). The coefficient of social capital is even larger than the one obtained in column I, suggesting that the importance of social capital goes beyond geographical differences.

We test the robustness of our results for other measures of economic development (not reported), and for other measures of judicial inefficiency (not reported). In all the cases the effect remains statistically significant.

Column III of Table 6 shows that in the linear probability model the social capital of origin coefficient is negative and highly statistically significant.

Social capital measured by blood donation has a negative and statistically significant effect on the probability of being shut down from credit (column IV). One standard deviation increase in the level of blood donation decreases the probability of not having access to credit by 13 percent.

F Informal Credit Market

Thus far, our analysis was restricted to institutional forms of investment and credit. Our dataset, however, provides us with information on the presence of informal loans, i.e., loans extended by friends or family members not living in the same household. As discussed in Section III, we expect that informal credit might partially substitute for formal credit wherever the latter is unavailable. Table 7 tests this prediction.

⁹We also estimated two separate probit models on the probability of being a discouraged borrower and on the probability of being turned down. The results (not reported) confirm those showed in Table 6.

We estimate a probit model of the likelihood a household has a loan outstanding with friends or relatives on our measures of social capital and the usual control variables (income, wealth, their squares, demographic characteristics, etc.). As expected, informal credit by friends or relatives is more widespread in low social capital areas. This effect is statistically significant and economically non-negligible. A one standard deviation decrease in social capital boosts the likelihood of an informal loan by almost 1% – a 25% increase in the sample average.

Once we control for North and South, the effect of social capital is virtually unchanged and still highly significant (column II). The same is true when we control for other measures of economic development (not reported), and for other measures of judicial inefficiency (not reported).

These results are fully supported by the linear probability model that controls for province fixed effects (column III). Households that come from areas with low social capital are more likely to receive loans from friends or relatives. This is consistent with Banfield's (1958) and Fukuyama's (1995) claims that low social capital societies rely more heavily on naturally high-trust relationships like friends and family. It is also consistent with individuals absorbing these attitudes in the early years of their lives.

Social capital measured by blood donation has a negative and statistically significant effect on the probability of borrowing from friends and relatives (column IV). One standard deviation increase in the level of blood donation decreases the probability of not having access to credit by 11 percent.

G Trust and the Use and Availability of Financial Contracts

Thus far, we have established a remarkable correlation between the level of social capital and the use and availability of financial contracts. Theoretically the importance of social capital on financial development is mediated by the level of trust needed to engage in financial transactions: the higher the level of social capital is, the more citizens participate in their communities and, the more they learn to trust others.

An obvious way to gain more confidence in our results is to check whether there exist

a direct relation between the level of interpersonal trust within a community and the use and availability of financial instruments. By itself, this relation would hardly be a proof of the effect of social capital, since people can also trust each other because effective legal enforcement prevents deviations. Nevertheless, the existence of this relation is a necessary ingredient of our story.

To measure the level of interpersonal trust, sociologists often rely on survey-based measures of how much people trust each other. The most famous example is the World Values Survey (WVS), which interviewed samples of people of varying size across 40 countries, including Italy, in 1990 and 1999. In each of those surveys, roughly 2,000 individuals were asked the question: “Generally speaking, would you say that you trust other Italians?”.

This measure has several shortcomings. First, the WVS is not stratified at the province level, thus several provinces are not present and others are severely under-represented. To address this problem, we pool the two surveys and we group data at the regional level, by attributing to each family the average response in the region where it is located (the 95 Italian provinces are organized in 20 regions). Second, as shown by Glaeser et al. (1999), responses tend to be more highly correlated with the degree of trustworthiness of the respondent rather than with his level of trust. Third, how can one trust the response to a survey of a person who is not trustworthy?

With these caveats in mind we re-estimate our basic regression for all the measures of use and availability of financial instruments (Table 8).¹⁰ In all the cases but loans from friends and relatives the effect of trust has the predicted sign. And in all the cases but deposits and availability of credit the predicted effect is statistically significant. The economic magnitude of the effect is between 20 and 70 percent lower than the estimates obtained using our primary measure of social capital.

Overall, the results support the claim that social capital influences the use and availability of financial contract via its effects on trust. This is even more so if one considers that both the lower magnitude and the lower statistical significance of the estimates can be easily

¹⁰In these regressions standard errors are corrected for possible clustering at the regional level.

explained by the inferior quality of our measure of trust, which is more noisy and vary only at the regional level.

V When Does Social Capital Matter More?

Results so far have shown a remarkable and pervasive correlation between the level of social capital of an area and the use and availability of financial contracts. To gain more confidence on the causal nature of this correlation, we want to explore whether the magnitude of this effect varies according to the theoretical predictions outlined in Section III. Therefore, we will analyze how the impact of social capital varies according to the quality of legal enforcement and the level of education of the investors.

A Social Capital and Legal Enforcement

If social capital is important when contracts are incomplete, it should be particularly relevant when law enforcement is weak. Thus, we expect a higher marginal effect of social capital in parts of Italy where law enforcement is comparatively worse.

In Table 9 we re-estimate our basic specifications, splitting the sample between provinces with relatively efficient judicial system (judicial inefficiency below the median of 3.5 years) and provinces with relatively inefficient judicial system (judicial inefficiency above the median).

Table 9.A reports the tobit estimates of the effect of social capital on the fraction of financial wealth invested in cash, deposits, and stocks. In all cases the impact of social capital is larger (in absolute terms) in areas with more inefficient courts. The effect of social capital on the fraction of wealth invested in stock is three times as large in areas with weak law enforcement and this difference is statistically significant at the 1% level. Also, in the case of wealth invested in cash, the impact of social capital is lower (only two-thirds) where the courts work better, albeit the difference is not statistically significant. Only in the case of deposits are the two coefficients very similar. As discussed in Section III, the demand of deposits requires less social capital because they can be called on demand and because the

supervision of the Bank of Italy reassures investors. Both of these protections do not rely on the efficiency of the court system. Thus, it is not very surprising that the effect of social capital does not vary according to the quality of law enforcement.

The first two columns of Table 9.B present the probit estimates of the likelihood of using checks split according to the quality of legal enforcement in the area. The effect of social capital is three times as large as areas with weak legal enforcement. The difference is statistically significant at the 1% level. In areas with better legal enforcement, social capital does not have a statistically significant impact on the probability of using checks.

A similar picture emerges if we look at the effect of social capital on access to credit. In areas with weak law enforcement, the effect of social capital has the expected sign and is statistically significant both for the probability of being discouraged from borrowing and for the probability of being turned down after applying for a loan. By contrast, the effect is not significant (and quantitatively very small) in areas with better law enforcement.

Consistently, the effect of social capital on informal credit is not statistically significant in areas with better law enforcement, while it is three times as big and statistically significant in areas with weak legal enforcement.

Overall, the results seem to conform very well to the prediction that social capital matters more where legal enforcement is weak. This result raises the possibility that countries lacking social capital can compensate for it with better legal enforcement. In practice, however, countries deficient in social capital also have weak legal enforcement. For example, in the sample of 28 countries in Knack and Keefer (1996), we find a correlation of 0.83 between trust and judicial efficiency. This might not be a simple coincidence. Putnam (1993) and La Porta et al. (1997a) suggest that the lack of social capital may negatively affect the working of institutions, thus also the quality of law enforcement. If this were the case, our estimates would grossly underestimate the overall impact of social capital.

B Social Capital and Education

Information and the ability to assimilate it are essential inputs for portfolio allocation. If some investors are not endowed with the necessary ability or information to manage their

portfolio, then they need to delegate this function. For the uninformed, delegation is the only alternative to keeping their money under a mattress. But delegation requires trust. Thus, to invest money in assets other than cash, trust becomes more necessary, the less sophisticated the investor. Similarly, understanding the risks involved with writing a check and the way to minimize them (e.g., writing ‘not transferable’ on the back) requires some level of sophistication. In the absence of sophistication, people will have to rely more on trust. Since the level of social capital enhances trust, our prediction is that *ceteris paribus*, the marginal impact of social capital on the use of financial contracts is higher among uneducated people than among educated people.

In our empirical analysis, we use education as a measure of access to information and information processing ability. The household sample contains the number of years of education of the household head. We split the sample at the median level of education (8 years, corresponding to the end of junior high school). Since for many years this was the mandatory level of schooling, there exists a large mass of people at that level, which we include in the low-education group. Hence, the higher number of observations in this subsample.

Table 10 presents the impact of social capital on the portfolio allocation and use of checks subdivided according to the household head’s level of education. As we can see in the first two columns, the impact of social capital on the proportion of wealth invested in cash is three times larger for low-educated households than for highly educated households. The difference is statistically significant at the 1% level.

The same can be said for deposits. In fact, social capital has no significant impact on the proportion of wealth invested in deposits among educated people, as should be the case, since deposits are very well protected contractually. By contrast, social capital has an economically and statistically significant impact on the proportion of wealth invested in deposits among households with low levels of education. A one standard deviation increase in social capital increases the proportion of wealth in deposits by 8 percentage points, equal to a 15% increase with respect to the mean. The difference between the impact of social capital in the two subgroups is significant at the 1% level.

Also the proportion of wealth invested in stocks is more sensitive to social capital among

less educated people. The difference, however, is quantitatively small (only 20%) and is not statistically significant. This is surprising, because we would have expected the effect to be stronger for equity investments, which require much more knowledge to be analyzed. This weak result might be due to the paucity of low-educated families who own stock (3.6% versus 15% of the well educated families and a population average of 7%). The extreme infrequency of the phenomenon makes it more subject to confounding effects. For example, widows may retain the portfolio allocation of their deceased husbands, even when they do not have the same level of education. To see whether this plays any role we re-estimated the two regressions restricting the sample to male household's head. The difference (not reported) increases to 34%, but it is still not statistically significant.

Finally, the last two columns of Table 10 report the estimates of the impact of social capital on the probability of using a check in the two subsamples. The impact of social capital among low educated people is eight times as big as the impact of social capital among highly educated people, and this difference is statistically significant at the 1% level. In fact, social capital has no statistically significant impact among highly educated people.

Overall, the results suggest that social capital is a more important input among less educated people.

VI Why Does Social Capital Matter?

The importance of social capital in shaping the behavior of individual actors is consistent with two not mutually exclusive interpretation. If social capital measure the level of non-legal enforcement within a community, as argued by Putnam and formalized by Spagnolo (1999), people living in areas with high social capital have a lot of opportunities of “punishing” a person who abuses their trust (Coleman, 1990). Alternatively, if social capital is a moral attitude imprinted with education, people living in areas with high social capital will behave cooperatively because they have internalized the social norms of the community and expect other individuals in the same community to behave accordingly.

To try and identify the relative importance of the two, we focus on the households that

moved from their place of origin. For those, it is possible to separately identify the effect of the environment they grew up in and the environment where they live. For these households, then, we create two separate measures of social capital. One is our measure of social capital for the province of birth (referenda turnout in the province of birth), the other is the measure of social capital for the province of residence (referenda turnout in the province of residence). To allow for possible differences between movers and non-movers, we introduce a separate measure of social capital for the households that did not move. This is referenda turnout for the province of residence, which by construction coincides with the province of birth.

In Table 11 we re-estimate all the households regressions introducing these three variables. The pattern of all the results is fairly similar. In all the specifications, the social capital of origin has the same sign as the social capital of residence and in four out of seven cases it is statistically significant at conventional levels. With only one exception, the social capital of residence is always more important, representing between 63 and 98% of the overall effect of social capital (i.e., the sum of the effect of the social capital of origin and the social capital of residence). We think that this decomposition may hold in general, since the overall effect of social capital for movers is almost identical to the effect of social capital for non movers in all regressions.

We find that the likelihood of receiving a loan from relatives and friends is more sensitive to the social capital of origin than to that of residence, albeit the difference is not statistically significant. This is not surprising, since the network of friends and family should remain where individuals grew up, and not where they currently live.

One possible objection to our interpretation that the social capital of origin affects the use and availability of financial contracts is that the estimated coefficients may simply capture the effects of discrimination. While we cannot rule out that discrimination might play a role, we can rule out that discrimination is the only source of this effect. In fact, it would be hard to argue that individuals born in areas with low social capital hold more cash and less stock as a result of discrimination, as columns I and III of Table 11 indicate.¹¹

¹¹We do not think that statistical discrimination (i.e., the use of the place of origin as a proxy for the true trustworthiness) is necessarily inconsistent with (or alternative to) the importance of social capital. In fact, if

Furthermore, if discrimination plays a very big role in the relation between social capital and the use of financial contracts, the overall effect of social capital for movers should be much bigger than the effect of social capital for non movers who do not face discrimination. As we already mentioned, this is not the case. The sum of the effects of the two social capital measures for movers is almost identical to the total effect for non movers.

Another possible objection to our interpretation that the social capital of origin affects the use and availability of financial contracts is that social capital of origin is simply a proxy for people's prior about environmental variables (such as court efficiency), which are updated slowly. An individual born in an area where courts are very inefficient - the argument goes - is reluctant to hold stock even after moving to an area where courts are more efficient, because his estimate of court efficiency is highly influenced by his early experience and updates slowly over time. While possible, this interpretation cannot explain why individuals coming from a low social capital area are denied credit more frequently, since the denial of credit depends on the loan's officer expectation of the applicant. For this reason, we re-estimate (not reported) the probability of being denied credit excluding the people who were discouraged. We find that it is still true that the social capital of origin positively affects the probability of being denied credit.

Thus, while discrimination alone can explain some results and slow adjustment in expectations can explain others, the only interpretation consistent with both is that social capital matters.

VII Conclusions

Our analysis identifies a very strong correlation between the level of social capital prevailing in an area and the use and availability of financial contracts. This effect is not simply due to omitted environmental variables, because the behavior of movers is still affected by the level of trust of their provinces of origin. This effect is also bigger when legal enforcement is

people coming from low areas with low social capital are less trustworthy (as suggested by the work of Glaeser et al. (1999)), it is optimal for others to infer their level of trustworthiness on the basis of their ethnicity or place of birth. This would be tantamount to discriminating against them.

weaker and when theory predicts social capital should matter more.

Thus, our findings show that social capital plays an important role in the degree of financial development across different parts of Italy. The obvious question is how generalizable these results are. Is this just a feature of a country with an inefficient legal enforcement? Is it an effect we can find only in a microeconomic analysis that does not have any aggregate consequences?

We cannot fully rule out the first possibility. In fact, our analysis of the interaction between trust and legal enforcement suggests that trust is much less important (sometimes not important at all) where the court system is more efficient or where people are more educated. One could legitimately question the importance of social capital in highly developed countries, with good legal enforcement and high levels of education. Most of the world, however, does not fit this description. Hence, social capital is likely to be very important in explaining the success (or lack thereof) of developing countries.

We, instead, try to answer the second question. Knack and Keefer (1996) report an aggregate measure of trust by country, derived from the World Values Survey. After controlling for the degree of law enforcement, we find a positive and statistically significant correlation between this measure of trust and several indicators of financial development used by La Porta et al. (1997b): the ratio of stock market capitalization to GDP, the number of listed companies per million of population, and the diffusion of corporate ownership. While this is far from a definite proof, it suggests that our results extend beyond a single country. More importantly, all these results together emphasize the pervasiveness of the effects of social capital and the importance of more research in this area.

Table 1:

Summary Statistics

The data comes from the Survey of Households Income and Wealth (SHIW), covering the period 1989-1995. The proportion of a household portfolio invested in cash/deposits/stocks is obtained as the amount of holdings in cash/deposits/stocks divided by total household financial wealth. "Use of checks" is an indicator variable equal to one if a household responds positively to the question: "Did you or some other member of the household issue checks in the course of the year to settle transactions?". "Discouraged and Turned down" is an indicator variable equal to one if an household responds positively to at least one of the following questions: "During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?"; "During the year did you or a member of the household apply for a loan or a mortgage to a bank or other financial intermediary and your application was turned down?". "Family loan" is an indicator variable equal to one if an household responds positively to the question: "As of the end of the year did you have debts outstanding towards friends or relatives not living with you?" Social Capital-1 is the average participation to national referenda, measured at the provincial level. Social Capital of origin is the voter turnout at referenda computed for the province of birth of an individual. Social capital 2 is number of bag of blood donated for inhabitant in the province of residence of the individual. Trust is a survey based variable from the World Values Survey. In the survey, individuals were asked the following question: "Using the responses on this card, could you tell me how much you trust Italians in general?: 1) Trust them completely 2) Trust them a little 3) Neither trust them, nor distrust them 4) Do not trust them very much 5) Do not trust them at all." Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. For monetary variables, as Per Capita GDP, Household Income and Household Wealth, we use an exchange rate of \$ 1 = Lit 1,800.

	Mean	Median	St. Dev.	Min.	Max.	Max.
% wealth in cash	0.24	0.06	0.34	0.00	1.00	32,286
% wealth in deposits	0.56	0.67	0.38	0.00	1.00	32,286
% wealth in stock	0.03	0.00	0.12	0.00	1.00	32,286
Use of checks	0.49	0.00	0.50	0.00	1.00	32,617
Discouraged/turned down	0.03	0.00	0.16	0.00	1.00	32,617
Family loans	0.03	0.00	0.18	0.00	1.00	32,617
Social capital 1	0.80	0.83	0.08	0.62	0.92	32,617
Social capital 1-origin	0.79	0.80	0.09	0.60	0.92	32,136
Social capital 2	0.03	0.02	0.02	0.00	0.11	32,617
Trust	3.24	3.24	0.12	3.02	3.62	32,617
Judicial inefficiency	3.63	3.50	1.25	1.44	8.32	32,617
Squared Judicial inefficiency	14.75	12.26	11.10	2.08	69.28	32,617
North	0.43	0.00	0.49	0.00	1.00	32,617
South	0.36	0.00	0.48	0.00	1.00	32,617
Per capita GDP (in dollars)	16,257	14,773	7,145	6,119	40,325	32,617
Income (in dollars)	25,318	20,939	18,429	0.00	428,376	32,617
Wealth (in dollars)	136,451	81,388	233,101	-104,023	9,905,833	32,396
Age	53.04	53.00	15.10	17	90	32,617
Education	8.21	8.00	4.67	0.00	18.00	32,617
# people living in the house	3.00	3.00	1.37	1.00	9.00	32,617
Married	0.74	1.00	0.44	0.00	1.00	32,617
Male	0.78	1.00	0.42	0.00	1.00	32,617
# Kids	0.65	0.00	0.94	0.00	7.00	32,617
% false checks	0.41	0.27	0.32	0.07	1.75	32,617

Table 2:

Effect of Social Capital on the Amount of Financial Wealth Invested in Cash

The dependent variable is the proportion of financial wealth a household detains in cash. For all columns but the last one the reported coefficients are tobit estimates. In the last column the reported coefficients are OLS estimates with fixed province effects. The sample is a quasi-panel of Italian families in 1989, 1991, 1993 and 1995. Some of the individuals are interviewed in more than one year. Panel A contains multiple observations of the same individual, while Panel B contains only the earliest observation for every respondent. Social Capital is the average participation to national referenda, measured at the provincial level. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. Social capital 2 is number of bag of blood donated for inhabitant in the province of residence of the individual. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. Column III regression also contains a province fixed effect. The standard errors reported in parentheses are corrected for clustering of the residual at the provincial level.

Panel A: Whole Sample

	I	II	III	IV
Social capital 1	-0.948 (0.145)	-0.513 (0.184)		
North		-0.050 (0.014)		
South		0.081 (0.029)		
Social capital 1 -origin			-0.197 (0.035)	
Social capital 2				-1.872 (0.528)
Judicial inefficiency	0.123 (0.027)	0.086 (0.025)		0.143 (0.031)
Squared Judicial inefficiency	-0.013 (0.003)	-0.010 (0.003)		-0.014 (0.004)
Per capita GDP	-0.781 (0.348)	-0.089 (0.392)		-2.643 (0.782)
Pseudo-R2	0.199	0.204	0.259	0.191
N	32,286	32,286	31,805	31,213

Panel B: Only Non-Repeated Observations

	I	II	III	IV
Social capital 1	-0.947 (0.145)	-0.580 (0.188)		
North		-0.045 (0.014)		
South		0.069 (0.033)		
Social capital 1 -origin			-0.220 (0.041)	
Social capital 2				-1.940 (0.525)
Judicial inefficiency	0.130 (0.032)	0.097 (0.030)		0.149 (0.035)
Squared Judicial inefficiency	-0.014 (0.004)	-0.011 (0.004)		-0.014 (0.004)
Per capita GDP	-1.116 (0.361)	-0.440 (0.408)		-3.030 (0.866)
Pseudo-R2	0.206	0.210	0.272	0.199
N	23,019	23,019	22,658	22,322

Table 3:

Effect of Social Capital on the Amount of Financial Wealth Invested in Bank Deposits

The dependent variable is the proportion of financial wealth a household detains in bank and postal deposits. For all columns but the last one the reported coefficients are tobit estimates. In the last column the reported coefficients are OLS estimates with fixed province effects. The sample is a quasi-panel of Italian families in 1989, 1991, 1993 and 1995. Social Capital is average participation to national referenda, measured at the provincial level. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Social capital 2 is number of bag of blood donated for inhabitant in the province of residence of the individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. Column III regression also contains a province fixed effect. The standard errors reported in parentheses are corrected for the potential clustering of the residual at the provincial level.

	I	II	III	IV
Social capital 1	0.781 (0.138)	0.607 (0.183)		
North		-0.022 (0.013)		
South		-0.050 (0.025)		
Social capital 1 -origin			-0.074 (0.043)	
Social capital 2				1.015 (0.480)
Judicial inefficiency	-0.071 (0.027)	-0.073 (0.026)		-0.095 (0.034)
Squared Judicial inefficiency	0.008 (0.003)	0.008 (0.003)		0.009 (0.004)
Per capita GDP	-0.701 (0.511)	-0.799 (0.450)		1.026 (0.892)
Pseudo-R2	0.045	0.046	0.0653	0.039
N	32,286	32,286	31,805	31,213

Table 4:

Effect of Social Capital on the Demand for Equity

The dependent variable is the proportion of financial wealth a household detains in stocks or mutual funds. For all columns but the last one the reported coefficients are tobit estimates. In the last column the reported coefficients are OLS estimates with fixed province effects. The sample is a quasi-panel of Italian families in 1989, 1991, 1993 and 1995. Social Capital is the average participation to national referenda, measured at the provincial level. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Social capital 2 is number of bag of blood donated for inhabitant in the province of residence of the individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. Column III regression also contains a province fixed effect. The standard errors reported in parentheses are corrected for the potential clustering of the residual at the provincial level.

	I	II	III	IV
Social capital 1	1.799 (0.338)	0.909 (0.523)		
North		0.210 (0.042)		
South		-0.130 (0.087)		
Social capital 1 -origin			0.047 (0.013)	
Social capital 2				5.200 (0.862)
Judicial inefficiency	-0.064 (0.097)	0.040 (0.074)		-0.063 (0.097)
Squared Judicial inefficiency	0.006 (0.011)	-0.002 (0.009)		0.004 (0.012)
Per capita GDP	0.623 (1.653)	-0.595 (0.873)		2.881 (1.215)
Pseudo-R2	0.258	0.267	0.142	0.260
N	32,286	32,286	31,805	31,213

Table 5:

Effect of Social Capital on the Use of Checks

The dependent variable is an indicator variable taking value one if the interviewed household responds positively to the question: “Did you or some other member of the household issue checks in the course of the year to settle transactions?” For all columns but the last one the reported coefficients are probit estimates of the effect of a marginal change in the corresponding regressor on the probability of using a check, computed at the sample mean of the independent variables. The coefficients reported in the last column are from a linear probability model with fixed province effects. The sample is a quasi-panel of Italian families in 1989, 1991, 1993 and 1995. In column II the sample is restricted to the individuals owning a bank account. Social Capital is the average participation to national referenda, measured at the provincial level. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Social capital 2 is number of bag of blood donated for inhabitant in the province of residence of the individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. Column III regression also contains a province fixed effect. The standard errors reported in parentheses are corrected for the potential clustering of the residual at the provincial level.

	I	II	III	IV	V
Social capital 1	0.732 (0.171)	0.411 (0.183)	0.282 (0.246)		
North			0.106 (0.032)		
South			-0.062 (0.037)		
Social capital 1 -origin				0.208 (0.048)	
Social capital 2					2.320 (0.507)
Judicial inefficiency	-0.092 (0.064)	-0.057 (0.064)	-0.034 (0.050)		-0.088 (0.063)
Squared Judicial inefficiency	0.009 (0.006)	0.005 (0.006)	0.004 (0.005)		0.007 (0.006)
Per capita GDP	4.312 (0.913)	4.251 (0.899)	3.323 (0.634)		5.315 (0.693)
Pseudo-R2	0.271	0.207	0.275	0.332	0.270
N	32,396	27,683	32,396	31,915	31,320

Table 6:

Effect of Social Capital on the Availability of Consumer Credit

The dependent variable is an indicator variable taking value one if a household responds positively to at least one of the following questions: “During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?”; “During the year did you or a member of the household applied for a loan or a mortgage to a bank or other financial intermediary and your application was turned down?”. In columns I-III, the reported coefficients are probit estimates of the effect of a marginal change in the corresponding regressor on the probability of being discouraged or turned down, computed at the sample mean of the independent variables. In column IV the reported coefficients are OLS estimates of a linear probability model with fixed province effects. The sample is a quasi-panel of Italian families in 1989, 1991, 1993 and 1995. Social Capital is the average participation to national referenda, measured at the provincial level. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Social capital 2 is number of bag of blood donated for inhabitant in the province of residence of the individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. Column III regression also contains a province fixed effect. The standard errors, which are reported in parentheses, are corrected for the potential clustering of the residual at the provincial level.

	I	II	III	IV
Social capital 1	-0.059 (0.017)	-0.087 (0.025)		
North		-0.005 (0.003)		
South		-0.008 (0.004)		
Social capital 1-origin			-0.037 (0.019)	
Social capital 2				-0.189 (0.054)
Judicial inefficiency	0.011 (0.004)	0.010 (0.004)		0.010 (0.004)
Squared Judicial inefficiency	-0.001 (0.000)	-0.001 (0.000)		-0.001 (0.000)
Per capita GDP	0.287 (0.105)	0.274 (0.087)		0.203 (0.070)
Pseudo-R2	0.068	0.069	0.023	0.070
N	32,396	32,396	31,915	31,320

Table 7:

Effect of Social Capital on the Informal Credit Market

The dependent variable is an indicator variable taking value one if a household responds positively to the question: “As of the end of the year did you have debts outstanding towards friends or relatives not living with you?” In columns I-III the reported coefficients are probit estimates of the effect of a marginal change in the corresponding regressor on the probability of being indebted with a relative or friend, computed at the sample mean of the independent variables. In column IV the reported coefficients are OLS estimates of a linear probability model with fixed province effects. The sample is a quasi-panel of Italian families in 1989, 1991, 1993 and 1995. Social Capital is the average participation to national referenda, measured at the provincial level. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Social capital 2 is number of bag of blood donated for inhabitant in the province of residence of the individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. Column III regression also contains a province fixed effect. The standard errors reported in parentheses and are corrected for the potential clustering of the residual at the provincial level.

	I	II	III	IV
Social capital 1	-0.092 (0.024)	-0.120 (0.040)		
North		0.004 (0.006)		
South		-0.005 (0.006)		
Social capital 1 - origin			-0.062 (0.021)	
Social capital 2				-0.160 (0.084)
Judicial inefficiency	-0.001 (0.008)	0.002 (0.007)		0.002 (0.008)
Squared Judicial inefficiency	0.000 (0.001)	0.000 (0.001)		0.000 (0.001)
Per capita GDP	0.208 (0.127)	0.158 (0.152)		0.000 (0.118)
Pseudo-R2	0.083	0.083	0.035	0.080
N	32,396	32,396	31,915	31,320

Table 8:

Effects of Trust on The Use and Availability of Financial Instruments

This Table re-estimates the basic regressions for the use of financial instruments, using a different measure of Social Capital, Trust. Trust is a survey based variable from the World Values Survey. In the survey, individuals were asked the following question: "Using the responses on this card, could you tell me how much you trust Italians in general?: 1) Trust them completely 2) Trust them a little 3) Neither trust them, nor distrust them 4) Do not trust them very much 5) Do not trust them at all". The proportion of a household portfolio invested in cash/deposits/stocks is obtained as the amount of holdings in cash/deposits/stocks divided by total household financial wealth. "Use of checks" is an indicator variable equal to one if a household responds positively to the question: "Did you or some other member of the household issue checks in the course of the year to settle transactions?". "Discouraged or Turned Down" is an indicator variable equal to one if a household responds positively to at least one of the following questions: "During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?", "During the year did you or a member of the household applied for a loan or a mortgage to a bank or other financial intermediary and your application was turned down?". "Loan F&F" is an indicator variable equal to one if a household responds positively to the question: "As of the end of the year did you have debts outstanding towards friends or relatives not living with you?". The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. The first three columns report Tobit estimates, the others probit ones. In these latter cases the reported coefficients are estimates of the effect of a marginal change in the corresponding regressor on the probability of using a check, being discouraged or turned down from borrowing and receiving loans from friends and family, computed at the sample mean of the independent variables. The standard errors reported in parentheses are corrected for the potential clustering of the residual at the provincial level.

	Cash	Deposits	Stock	Checks	Discouraged or Turned down	Loan from F & F
Trust	-0.289 (0.101)	0.164 (0.119)	0.805 (0.238)	0.328 (0.135)	-0.016 (0.010)	0.002 (0.016)
Judicial inefficiency	0.160 (0.034)	-0.103 (0.038)	-0.117 (0.092)	-0.118 (0.052)	0.013 (0.004)	0.004 (0.008)
Squared Judicial inefficiency	-0.015 (0.004)	0.010 (0.004)	0.008 (0.011)	0.010 (0.005)	-0.001 (0.000)	0.000 (0.001)
Per capita GDP	-2.046 (0.869)	0.617 (0.794)	1.350 (1.965)	4.882 (0.975)	0.204 (0.100)	-0.040 (0.156)
Pseudo-R2	0.188	0.039	0.255	0.270	0.066	0.078
N	32,286	32,286	32,286	32,396	32,396	32,396

Table 9:

Social Capital and Law Enforcement

This table re-estimates the basic regressions, splitting the sample between provinces with relatively efficient judicial system (judicial inefficiency below the median) and provinces with relatively inefficient judicial system (judicial inefficiency above the median). Judicial inefficiency is measured by the number of years it takes to complete a first-degree trial in the local courts.

In Panels A and B, the proportion of a household portfolio invested in cash/deposits/stocks is obtained as the amount of holdings in cash/deposits/stocks divided by total household financial wealth. “Use of checks” is an indicator variable equal to one if a household responds positively to the question: “Did you or some other member of the household issue checks in the course of the year to settle transactions?”. “Discouraged or Turned down” is an indicator variable equal to one if an household responds positively to at least one of the following questions: “During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?”, “During the year did you or a member of the household applied for a loan or a mortgage to a bank or other financial intermediary and your application was turned down?”. “Loan F&F” is an indicator variable equal to one if a household responds positively to the question: “As of the end of the year did you have debts outstanding towards friends or relatives not living with you?”. Social Capital is the average participation to national referenda, measured at the provincial level. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies.

Panel A reports Tobit estimates, panel B probit ones. In such cases the reported coefficients are estimates of the effect of a marginal change in the corresponding regressor on the probability of using a check, being denied credit (the sum of the probability of being discouraged or turned down from borrowing) and receiving loans from friends and family, computed at the sample mean of the independent variables. The standard errors reported in parentheses are corrected for the potential clustering of the residual at the provincial level.

Panel A:						
	% cash in portfolio		% deposits in portfolio		% stock in portfolio	
	Efficient	Inefficient	Efficient	Inefficient	Efficient	Inefficient
Social capital 1	-0.743 (0.218)	-1.035 (0.192)	0.711 (0.185)	0.732 (0.210)	0.857 (0.440)	2.917 (0.483)
Judicial inefficiency	-0.304 (0.127)	-0.033 (0.058)	-0.189 (0.151)	0.081 (0.064)	1.466 (0.446)	-0.285 (0.224)
Squared Judicial inefficiency	0.067 (0.025)	0.000 (0.005)	0.031 (0.028)	-0.005 (0.006)	-0.281 (0.080)	0.028 (0.020)
Per capita GDP	-0.872 (0.556)	-0.359 (0.619)	-0.825 (0.551)	-0.199 (0.740)	1.470 (1.714)	-5.528 (1.828)
Pseudo-R2	0.260	0.156	0.053	0.060	0.242	0.279
N	17,144	15,142	17,144	15142	17,144	15,142

Panel B						
	Prob. Use of checks		Prob. denied credit		Loans F&F	
	Efficient	Inefficient	Efficient	Inefficient	Efficient	Inefficient
Social capital 1	0.378 (0.261)	1.003 (0.147)	-0.001 (0.027)	-0.095 (0.022)	-0.039 (0.034)	-0.134 (0.035)
Judicial inefficiency	0.509 (0.412)	-0.018 (0.085)	-0.039 (0.019)	0.009 (0.013)	0.051 (0.048)	-0.043 (0.020)
Squared Judicial inefficiency	-0.098 (0.072)	0.004 (0.007)	0.009 (0.003)	-0.001 (0.001)	-0.008 (0.009)	0.004 (0.002)
Per capita GDP	4.255 (0.952)	2.702 (0.619)	0.043 (0.134)	0.560 (0.107)	0.029 (0.128)	0.158 (0.248)
Pseudo-R2	0.240	0.284	0.067	0.075	0.081	0.092
N	17,198	15,198	17,198	15,198	17,198	15,198

Table 10:

Social Capital and Education

This table re-estimates the basic regressions for the use of financial instruments, splitting the sample on the basis of the level of education of the household's head. A household is defined low educated if the head has no more than 8 years of education. Correspondingly, a household is defined as highly educated if the head has more than 8 years of education. The proportion of a household portfolio invested in cash/deposits/stocks is obtained as the amount of holdings in cash/deposits/stocks divided by total household financial wealth. "Use of checks" is an indicator variable equal to one if a household responds positively to the question: "Did you or some other member of the household issue checks in the course of the year to settle transactions?". Social Capital is the average participation to national referenda, measured at the provincial level. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. Social Capital of origin is voter turnout at referenda computed for the province of birth of an individual. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. The first three columns report Tobit estimates, the last one Probit ones. In this latter case the reported coefficients are estimates of the effect of a marginal change in the corresponding regressor on the probability of using checks, computed at the sample mean of the independent variable. The standard errors reported in parenthesis are corrected for potential clustering of the residual at the provincial level.

	% cash in portfolio		% deposits in portfolio		% stock in portfolio		% use of checks	
	Low educ.	High educ.	Low educ.	High educ.	Low educ.	High educ.	Low educ.	High educ.
Social capital 1	-1.097 (0.192)	-0.376 (0.073)	1.058 (0.179)	-0.052 (0.095)	1.923 (0.473)	1.562 (0.300)	0.851 (0.159)	0.136 (0.153)
Judicial inefficiency	0.152 (0.033)	0.054 (0.016)	-0.112 (0.034)	0.023 (0.027)	0.136 (0.121)	-0.151 (0.101)	-0.093 (0.055)	-0.052 (0.055)
Sq. Judicial inefficiency	-0.017 (0.004)	-0.006 (0.002)	0.013 (0.004)	-0.002 (0.003)	-0.020 (0.015)	0.016 (0.011)	0.009 (0.005)	0.004 (0.006)
Per capita GDP	-0.803 (0.487)	-0.419 (0.240)	-0.367 (0.446)	-1.389 (0.722)	-1.201 (2.212)	1.175 (1.524)	4.571 (1.196)	1.663 (0.651)
Pseudo-R2	0.172	0.989	0.061	0.084	0.247	0.247	0.247	0.113
N	22,353	9,933	22,353	9,933	22,353	9,933	22,433	9,963

Table 11:

Why Does Social Capital Matter?

In this table we modify the way in which social capital enters all the basic regressions for households. For the families that moved across provinces, we differentiate between the social capital of the province of birth and the social capital of the province of residence. Then, we have the social capital of people who did not move. The proportion of a household portfolio invested in cash/deposits/stocks is obtained as the amount of holdings in cash/deposits/stocks divided by total household financial wealth. “Use of checks” is an indicator variable equal to one if a household responds positively to the question: “Did you or some other member of the household issue checks in the course of the year to settle transactions?”. “Discouraged or Turned Down” is an indicator variable equal to one if a household responds positively to at least one of the following questions: “During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?”, “During the year did you or a member of the household applied for a loan or a mortgage to a bank or other financial intermediary and your application was turned down?”. “Loan F&F” is an indicator variable equal to one if a household responds positively to the question: “As of the end of the year did you have debts outstanding towards friends or relatives not living with you?” Social Capital is the average participation to national referenda, measured at the provincial level. The variable north (south) is an indicator variable taking value one if an individual is resident in a northern (southern) region of Italy. “Social Capital non movers” is our measure of social capital interacted with a dummy variable equal to one if the province of residence is equal to the province of origin of the household’s head. “Social Capital of origin movers” is our measure of social capital computed for the province of birth of the household’s head interacted with a dummy variable equal to one if the province of origin is not equal to the province of residence. “Social Capital of residence movers” is our measure of social capital computed for the province of residence interacted with a dummy variable equal to one if the province of origin is not equal to the province of residence. Judicial inefficiency is the number of years it takes to complete a first-degree trial in the local courts. All the regressions contain the following control variables (not reported): household income (linear and squared), household wealth (linear and squared), the number of people belonging to the household, the number of kids in the household, household head age (linear and squared), his/her education (number of years of schooling), indicator variables for whether the head is married, is a male, for the sector in which he/she works, and for the level of job he/she has, plus three calendar year dummies. The first three columns report Tobit estimates, the others probit ones. In these latter cases the reported coefficients are estimates of the effect of a marginal change in the corresponding regressor on the probability of using a check, being denied credit (sum of the probability of being discouraged or turned down from borrowing), and receiving loans from friends and family, computed at the sample mean of the independent variables. The standard errors reported in parentheses are corrected for the potential clustering of the residual at the provincial level.

	Cash	Deposits	Stock	Checks	Denied credit	Loans from F & F
Social capital 1- non movers	-0.961 (0.145)	0.767 (0.139)	1.908 (0.344)	0.743 (0.171)	-0.065 (0.017)	-0.105 (0.024)
Social capital 1- of origin movers	-0.222 (0.085)	0.018 (0.104)	0.558 (0.164)	0.259 (0.068)	-0.023 (0.015)	-0.059 (0.020)
Social capital 1- of residence movers	-0.756 (0.156)	0.769 (0.166)	1.327 (0.359)	0.529 (0.175)	-0.040 (0.023)	-0.041 (0.030)
Judicial inefficiency	0.122 (0.027)	-0.072 (0.027)	-0.061 (0.098)	-0.091 (0.063)	0.011 (0.004)	0.000 (0.007)
Squared Judicial inefficiency	-0.013 (0.003)	0.008 (0.003)	0.005 (0.011)	0.008 (0.006)	-0.001 (0.000)	0.000 (0.001)
Per capita GDP	-0.814 (0.355)	-0.766 (0.546)	0.842 (1.669)	4.225 (0.898)	0.271 (0.110)	0.178 (0.131)
Pseudo-R2	0.201	0.046	0.260	0.271	0.069	0.085
N	31,805	31,805	31,805	31,915	31,915	31,915

References

- BANFIELD E. G., 1958, *The Moral Basis of a Backward Society*, Free Press, New York.
- BIANCO M., JAPPELLI T., AND PAGANO M. , Courts and Banks: Effects of Judicial Enforcement on Credit Markets, mimeo.
- BRANDOLINI, A. AND CANNARI L. , 1994, "Methodological Appendix: The Bank of Italy Survey of Household Income and Wealth", Ando A., Guiso L. and Visco I. *Saving and the accumulation of wealth. Essays on Italian households and government saving behavior*, Cambridge: Cambridge University Press.
- CASE, A. AND L. KATZ 1991, "The Company You Keep: The Effect of Family and Neighborhood on Disadvantaged Youth," NBER working paper # 3805.
- COLEMAN J.S., 1988, "Social Capital in the Creation of Human Capital" *American Journal of Sociology*, 94: 95-120.
- COLEMAN J.S., 1990, *Foundations of Social Theory*, Harvard University Press, Cambridge, MA.
- FISMAN, R., AND KHANNA, T. , 1999, "Is Trust a Historical Residue? Information Flows and Trust Levels." *Journal of Economic Behavior and Organization*, V 38, No. 1, p. 79-92.
- FUKUYAMA, F. , 1995, *Trust: The Social Virtues and the Creation of Prosperity*, Free Press.
- FUKUYAMA, F. , 1997, "Social capital and the modern capitalist economy: Creating a high trust workplace", *Stern Business Magazine*, 4(1).
- GLAESER, E., D. LAIBSON, J. SCHEINKMAN, C. SOUTTER 1999, " What Is Social Capital? The Determinants of Trust and Trustworthiness", NBER W.P. #7216.
- GLAESER, E., B. SACERDOTE, J. SCHEINKMAN 1996, " Crime and Social Interactions," *The Quarterly Journal of Economics*, 111: 508-548.
- GRANOVETTER M. 1985, "Economic Action and Social Structure: the problem of embeddedness", *American Journal of Sociology*, 23, pp. 481-510
- GUISO, L. AND JAPPELLI T. , 1999, "Household's Portfolio in Italy ", in Guiso L., Haliassos M., and Jappelli T. (eds), *Households Portfolios*, MIT Press, forthcoming.
- GUISO, L., JAPPELLI T. AND PISTAFERRI L. , 1998, "What Determines Earnings and Employment Risk", CEPR WP 2043.
- KIMBALL, M. , 1993, "Standard Risk Aversion," *Econometrica* 61: 589-611.
- KNACK, S. AND KEEFER, P. , 1996. "Does social capital have an economic payoff?: a cross-country investigation", *The Quarterly Journal of Economics*, 112(4): 1251.
- KNACK, S., AND P. ZAK, 1999 "Trust and Growth ", Claremont University Working Paper.
- JACOBS, J. (1961), *The Death and Life of Great American Cities*. New York: Vintage.
- ICHINO, A., AND G. MAGGI 1999 "Work Environment and Individual Background: Explaining Regional Shirking Differentials in a Large Italian Firm", NBER W.P. #7415.
- LA PORTA, R., FLORENCIO, LOPEZ DE SILANES, ANDREI SHLEIFER, AND ROBERT VISHNY , 1997a, "The Legal Determinants of External Finance", *Journal of Finance*, 52, 1131-1150.
- LA PORTA, R., FLORENCIO, LOPEZ DE SILANES, ANDREI SHLEIFER, AND ROBERT VISHNY , 1997b, "Trust in large organizations", *American Economic Review*, 87:2, 333-338.
- MANKIW, GREGORY , 1995, "The Growth of Nations", NBER working paper # R1999.
- MERTON, R. , 1971, "Optimal Consumption and Portfolio Rules in a Continuous-Time Model," *Journal of Economic Theory* 3: 373-413.
- PAGANO, MARCO, AND F. PANETTA AND L. ZINGALES , 1998, "Why Do Companies Go Public? An Empirical Analysis" *Journal of Finance*, 53: 27-64

- PENNAR, K. , 1997, "The ties that lead to prosperity: The economic value of social bonds is only beginning to be measured", *Business Week*, Dec. 15: 153-5.
- PUTNAM, R. (1993), *Making Democracy Work Civic Traditions in Modern Italy*, Princeton, Princeton University Press.
- PUTNAM, R. (1995), *The Case of Missing Social Capital*, Harvard University working paper.
- RAJAN, R. AND L. ZINGALES , 1998, "Financial Dependence and Growth" *American Economic Review*.
- SOLOW, R. , 1995, "Trust: The Social Virtues and the Creation of Prosperity (Book Review)", *The New Republic* 213: 36-40.
- SPAGNOLO, G. , 1999, "Social Relations and Cooperation in Organizations", *Journal of Economic Behavior and Organization* 38: 1-25.
- WILLIAMSON, O., 1993, "Calculativeness, Trust, and Economic Organization", *Journal of Law and Economics*, 36: 453-486.
- ZINGALES L. , 1994, "The Value of the Voting Right: A Study of the Milan Stock Exchange Experience", *The Review of Financial Studies*.

Appendix

1. The SHIW

The Bank of Italy Survey of Household Income and Wealth (SHIW) collects detailed data on demographics, households' consumption, income and balance sheets. The survey started to be run in the mid 1960s but is available on tape only since 1984. Over time, the survey has gone through various changes regarding sample size and design, sampling methodology and questionnaire contents. Since 1989, however, sampling methodology, sample size and broad contents of the information collected is unchanged. For this

reason, in this study we choose to rely on the four latest waves (1989, 1991, 1993 and 1995). Each survey covers more than 8,000 households for a total of 32,648 household-year observations. Each SHIW surveys a representative sample of the Italian resident population. Sampling is in two stages, first municipalities and then households. Municipalities are divided into 51 strata defined by 17 regions and 3 classes of population size (more than 40,000, 20,000 to 40,000, less than 20,000). Households are randomly selected from registry office records. Households are defined as groups of individuals related by blood, marriage or adoption and sharing the same dwelling. The head of the household is conventionally identified with the husband, if present. If instead the person who would usually be considered the head of the household works abroad or was absent from the household at the time the interview took place, the head of the household is the person responsible for managing the household's resources. The net response rate (ratio of responses to contacted households net of ineligible units) is 38 percent in 1989, 33 percent in 1991, 58 percent in 1993, and 57 percent in 1995. Increased response rate may be due to a change in the surveying company in 1993. Brandolini and Cannari (1994) present a detailed discussion of sample design, attrition, and other measurement issues, and comparisons of the SHIW variables with the corresponding aggregates. Starting in 1989, each SHIW has re-interviewed some households from the previous surveys. The panel component has increased over time: 15 percent of the previous survey sample was re-interviewed in 1989, 27 percent in 1991, 43 percent in 1993, and 45 percent in 1995. In the panel component, the sampling procedure is also determined in two stages: selection of municipalities (among those sampled in the previous survey), and then selection of households re-interviewed. This implies that there is a fixed component in the panel (for instance, households interviewed 5 times between 1987 to 1995, or 4 times from 1991 to 1995) and a new component in every survey (for instance, households re-interviewed only in 1989).

Variables' Definition:

In the empirical estimates all demographic variables - age, education, gender, whether is married, type of occupation and sector - refer to the household head. Monetary variables (income, wealth and consumption) are deflated using the Consumer Price Index and expressed in 1995 lire.

Cash holdings

The following question was asked of household heads in each of the surveys: "What is the average amount of cash held in your family?"

Deposits, Stocks and mutual funds ownership and amounts

In a typical survey households are asked first to report ownership of the specific financial instrument and then to indicate the portfolio share, in 1989, or to report the asset bracket in a list of 14 possible brackets, in 1991, 1993 and 1995. In 1989 assets amounts are obtained combining knowledge of the shares, of the value of financial wealth held in cash and the fact that portfolio shares add up to 1. In 1991, 1993 and 1995, assets amounts are imputed assuming that the household holds the mid-point of the reported interval. It is clear from this procedure that while stocks and mutual funds ownership only suffers from non-reporting, their amounts is affected by imputation errors. For details on how financial assets values are computed in the SHIW see Guiso and Jappelli (1999)

Discouraged borrowers and turned down consumers

The following questions were asked in each survey: "During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?" Those answering yes to this question are classified as "discouraged borrowers". Those answering yes to the following questions are classified as "turned down" consumers: "During the year did you or a member of the household applied for a loan or a mortgage to a bank or other financial intermediary and your application was turned down?"

Use of checks and number of checks issued

The following questions were asked to household heads in each of the surveys: "Did you or some other member of the household issue checks in the course of the year to settle transactions?" If the answer to the question is yes "How many checks did your family issued on average in per month over the year?" To obtain the number of checks issued in a year we multiply the reported monthly figure by 12.

Loans from friends or relatives

The following questions were asked to household heads in each of the surveys: "As of the end of the year did you have debts outstanding towards friends or relatives not living with you? If yes, what is their amount?" This information is used to compute the existence and value of informal loans.

Consumption, income and wealth

Consumption is the sum of the expenditure on food consumption, entertainment, education, clothes, medical expenses, housing repairs and additions, and imputed rents. Expenditures on durable goods (vehicles, furniture and appliances, art objects) are therefore not included in the definition of consumption. Income is the sum of earnings of all members of the households that worked for part or the whole year, pension income accruing to retired members, income from capital and transfers. Wealth is the total of financial and real assets net of household debt. The first is the sum of cash balances, checking accounts, savings accounts, postal deposits, government paper, corporate bonds, mutual funds and investment fund units, stocks. In 1989 total financial wealth is readily available. For other years it must be estimated because the categories of financial assets (except cash holdings) were provided in 15 bands; the average value between the lower and the upper band was used in determining the level of each asset. Real assets include investment real estate, business wealth, primary residence and the stock of durables.

Education of the household head

This variable is originally coded as: no education (0); completed elementary school (5 years); completed junior high school (8 years); completed high school (13 years); completed college (18 years); graduate education (more than 20 years). The variable is coded according to the values given in parenthesis. For the highest class we assume a value of 20 years.

Relative risk aversion

Relative risk aversion is the product of the Arrow-Pratt measure of absolute risk aversion and household's consumption. The Arrow-Pratt measure of absolute risk aversion is obtained from a direct question to a survey lottery. Each survey participant is offered a hypothetical lottery and is asked to report the maximum price that he would be willing to pay in order to participate. Specifically, he is asked the following question:

"We would like to ask you a hypothetical question that we would like you to answer as if the situation was a real one. You are offered the opportunity of acquiring a security permitting you, with the same probability, either to gain 10 million lire or to lose all the capital invested. What is the most that you are prepared to pay for this security?"

Ten million lire correspond to about Euros 5,000. Interviews are done personally at the consumer premises by professional interviewers. These, in order to help understand the question, show an illustrative card to the respondent and are ready to provide explanations. The respondent can answer in one of following three ways: a) declare the maximum amount he is willing to pay to participate; b) don't know; c) unwilling to answer.

3. Other variables

Social Capital

To measure social capital we used two different measures.

Referenda turnout We used voter turnout at the province level for all the referenda before our household data starts (1989). These include ??? referenda in the period between 1946 and 1987. Among which: the institutional referenda for the choice between monarchy and republic (June 1946); the referenda on divorce (May 1974); the referenda on public order (June 1978); the second referenda on public order and the referenda on abortion (May 1981); the referenda on wage indexation (June 1985); the referenda on nuclear power (November 1987); For each province turnout data were average across time. Each household was attached the measure of social capital in the province where it is located. Social capital of origin is the measure of social capital in the province of birth of the household head.

Blood donation It is the number of blood bag per million inhabitants in the province collected by AVIS, the Italian association of blood donors, in 1995. Each bag contains about 16oz of blood and blood is collected by AVIS among its members. The association, which is completely private and non-profit, was founded in the early 1920s and is present in all Italian regions and 91 provinces (out of 95) with 2.796 city branches. It

groups about 875.000 donors and is the largest blood donors association not only in Italy, where it collects over 90% of the whole blood donations, but also in the world. Its members who work for it voluntarily run the association. Blood donations are completely anonymous. By statute AVIS ".founds its activity in the principles of democracy, free social participation and voluntary as central and non-substitutable instrument of human solidarity". All the blood collected is handed over freely to the public hospitals; beneficiaries remain anonymous both to the donors and to the association.

Trust To measure trust we use a survey measure coming from the WVS for Italy in years 1990 and 1999. In each of the surveys roughly 2,000 individuals were asked to answer to the following question: "Using the responses on this card, could you tell me how much you trust other Italians in general?: 1 Trust them completely 2 Trust them a little 3 Neither trust them, nor distrust them 4 Do not trust them very much 5 Do not trust them at all".

Courts inefficiency

The indicator of court inefficiency is computed as the mean number of years it takes to complete a first-degree trial by the courts located in a province. It has been computed using courts level data on the length of trials and then averaging out across courts located in the same province.

Crime Omicidi volontari, rapine ed estorsioni denunciati, divisi per la popolazione nel 1996 (0/00).