



Munich Personal RePEc Archive

Social trust and use of banking services across households in 28 transitional countries

Afandi, Elvin and Habibov, Nazim

Islamic Development Bank Group, University of Windsor

2 August 2012

Online at <https://mpra.ub.uni-muenchen.de/46997/>

MPRA Paper No. 46997, posted 19 May 2013 23:48 UTC

Social trust and use of banking services across households in 28 transitional countries

Elvin Afandi¹ & Nazim Habibov²

Abstract

In this paper, we use survey data from a sample of 29,000 households from 28 transitional countries and Turkey to address two main questions: (i) is there any effect of social trust on the use of banking services and (ii) what are the household-level and country-specific determinants of using banking services in transitional countries. We found that the higher level of trust in people predicts a greater level in use of banking services by households regardless of the model specifications and econometric adjustments employed. This association appears to be more prominent among less educated respondents and in countries with low levels of legal enforcement. The results also suggest that location, income and wealth of households, along with country income level, legal enforcement and inflation rates strongly affect the decisions made by households regarding their use of banking services. In contrast, we found either a very small or non-significant impact with regard to bank ownership structure on the use of banking services across households.

Key words: use of banking services, social trust, transitional countries

JEL Classification: G21, P20, O16

¹ Islamic Development Bank Group, Jeddah, Kingdom of Saudi Arabia

² School of Social Work, University of Windsor, Windsor, Ontario, Canada

1. Introduction

Following the seminal paper written by Coleman (1988), research on the potential link between social capital and economic performance has become widespread. Putnam (1993) documented a strong positive correlation between the degree of individuals' free association with others and economic performance in Italy. Fukuyama (1995) showed the strong effect of social capital on economic development in general. Following these seminal early papers, a large body of empirical literature has emerged to validate the benefits of social capital on economic outcomes. Helliwell and Putnam (1995) argued that regions of Italy with high levels of social capital grew faster than did regions without high levels of social capital if initial income was held constant. Knack and Keefer (1997) demonstrated that for a sample of 29 market economies, higher levels of trust were conducive to growth. Knack and Zack (2001) further confirmed that this correlation persisted even after controlling for the quality of law enforcement.

One of the mechanisms through which social capital affects economic performance is through enhancing the prevailing level of social trust. The importance of social capital has been widely recognized in the context of microfinance, suggesting that social capital is associated with repayments in group lending (Sharma and Zeller, 1998; Van Bastelaer and Leathers, 2006; Karlan, 2007). Similarly, Calderon et al. (2002) empirically tested the relationship between social capital and a broad range of financial development measures for a cross-section of countries during the period 1980-1995. The authors reported that social capital is positively associated with a higher degree of financial efficiency and depth indicators such as bank assets, private credits by banks, bank overhead costs and the net interest margin. Finally, Guiso et al. (2004) evaluated the association between household social capital and various indicators of bank service utilization in Italy. The authors reported that households are more likely to use checks, invest in stocks, have access to credit lines and use less informal credit in the areas of Italy where social capital is high.

However, the question regarding the effect of social trust on the usage of banking services has been under-researched in transitional countries. With this context in mind, the purpose of this paper is to complement and extend the ongoing discussion of the effect of social capital on bank service utilization in two unique ways. First, to the best of our knowledge this is the first study which specifically focuses on social trust and the usage of formal banking services across a large set of transitional countries. We use high-quality nationally-representative micro data set from 28 transitional countries as well as Turkey to identify the characteristics of households which may be associated with the usage of banking services. Furthermore, we combine micro-data from this population survey with a diverse set of aggregated macro economic indicators. Some of these indicators reflect the general level of economic development and macro-economic stability such as GDP per capita and inflation. Other indicators reflect the dimensions of national banking systems such as state ownership of banks and index of creditor rights protection. We also use several statistical adjustments to confirm the robustness of the estimated association between social capital and bank service utilization. Second, and perhaps most importantly, we use two simultaneous equation specifications with instrumental variables to isolate the impact of social trust on access to banking services and to avoid reverse causality. In this way, we are able to establish and quantify the true causal effect of social trust on the use of banking services.

Our results suggest that social trust is strongly and positively associated with the use of banking services. After controlling for a number of individual, household and country-level characteristics as well as various specifications, we still found that higher levels of social trust are linked with increased use of banking services such as having bank accounts and bank cards. These associations are more salient among less educated people and in countries with low levels of legal enforcement. It was also found that the probability of households using banking services was higher in urban areas, and among those with more income and greater wealth. Our results also suggest that country-specific determinants such as GDP per capita, legal enforcement and inflation rates strongly affect household decisions regarding whether or not they will use banking services. We further found that bank ownership structure has a very small and statistically non-significant impact on the use of banking services.

The remainder of the paper is organized as follows. The section following this introduction describes the data and empirical methodology used. The empirical results are presented and discussed in Section 3, and the conclusion can be found in Section 4.

2. Data and methodological framework

2.1 Data set

Our study utilized the data set of the Life-in-Transition survey (LITS) that was conducted in 2006 by the European Bank of Reconstruction and Development in collaboration with the World Bank (EBRD, 2007). The LITS micro data set includes 28 transitional countries comprising of 16 countries in Eastern Europe and 11 in the Commonwealth of Independent States³. Turkey was also included in the survey for comparison purposes. The aim of the LITS was to gather valuable insight into the ways that transition has affected the lives of people across the region. To achieve this aim, LITS assembled a comprehensive and directly comparable set of indicators about life satisfaction and living standards, poverty and inequality, satisfaction with public services, and attitudes towards a market economy and democracy during transition (EBRD, 2007).

A consistent sampling methodology was used across all the countries. One thousand households were interviewed in each country, with a total of 29,000 households interviewed altogether (Synovate, 2006). The sample is nationally representative. The LITS gathers data on a broad range of topics related to the various socio-demographic characteristics of respondents and households. The LITS questionnaire consists of two sections. The first section of the questionnaire is administered to household head who is defined as the most knowledgeable person in the household and is designed to collect information on household composition, housing, expenditures and wealth. The second section of the questionnaire is administered to adult household member in order to gather the individual's personal information, information about her or his economic activities, values and attitudes, as well as life history. The individual member of household was selected for the interview based on the "last birthday" sampling rule. In reality, in 60% of

³ Albania, Armenia, Azerbaijan, Belarus, Bosnia & Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Macedonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Poland, Romania, Russia, Serbia & Montenegro, Slovak Republic, Slovenia, Tajikistan, Turkey, Ukraine, and Uzbekistan.

the households, the household head and the main responded were the same person (Beck and Brown, 2011). In other words, most of the respondents were also the households heads. The overall household interview success rate was 63 percent, the respondent interview success rate was 72 percent and the refusal rate was 23 percent (EBRD, 2007).

In addition to the LITS micro data, we used country-level information on the macro and institutional variables that might have affected the degree of household access to banking services. Table A.1 in the appendix reports the sources and definitions of the country-level data set, along with the actual interview questions.

2.2 Methodological framework

Outcome variable: the usage of banking services

The main objective of this study is to evaluate how social trust affects the usage of banking services in transitional countries. Two indicators available in the LITS are employed to gauge the extent of the usage of banking services. The variable *Accounts* is equal to 1 if the household has a bank account, and 0 if it does not. The variable *Cards* is equal to 1 if the household has a debit or credit bank card, and 0 if otherwise.

Social capital

Trust in people has been used as an indicator of social trust that LITS measures through the question “Generally speaking, would you say that today most people can be trusted, or that you can’t be too careful in dealing with people?”. There are five possible responses to this question on a scale of 1 to 5, where 1 means that the person has complete distrust in people, and 5 means that most people can be trusted. These responses were aggregated as a new binary variable getting 1 if the respondent considers that other people can be trusted (answers 4 or 5 of the question), and 0 if otherwise (answers 1, 2 or 3). For this study, a single trust measure, rather than a set of dummies, has been used due to the instrumental variable analysis employed later.

Binominal probit model

Given that the outcome variables are binary dependent variables, we commenced with an estimation of binary probit regression. We estimated the model described above in two steps. Both steps use the same indicators of banking penetration and social capital, while other covariates vary between steps. In the first step, the indicators of banking service usage have been related to the individual, household, and country characteristics (Beck and Brown, 2011). At the household and individual levels we used the following covariates: household *location*, *income*, and *wealth* along with the respondent’s *age*, *gender*, level of *education*, *employment* and *minority* status (e.g. Guiso et al. 2004; Beck and Brown, 2011). All these variables have been generated from the LITS. Among the household level characteristics, we expect that higher levels of current household income (proxied by per capita household monthly expenditures in USD) and longer term wealth status (proxied by car ownership) are positively associated with the use of banking services. Conversely, we expect that living in rural areas will have opposite effect. Since Beck and Brown (2011) postulate that household use of banking services are influenced by the respondent’s level of education, social integration in the form of minority status,

and other individual-level characteristics of household members, such as gender and age, these individual-level variables were employed as controls.

At the country level, we controlled for country-level financial infrastructure and economic development indicators which are proxied by the *legal rights* of creditors and borrowers, the level of *per capita GDP*, the structure of *bank ownership* and the level of *inflation* (e.g. Calderon et al. 2002; Guiso et al. 2004). It is expected that better law enforcement and higher per capita GDP will increase the likelihood of the usage of banking services. In contrast, a negative relationship between the inflation level and a household's use of banking services is expected. Lastly, despite contradictory evidence that exists regarding the relationship between the ownership structure within the banking system and the use of banking services by households, we hypothesize that state ownership of banks could lead to an increase in the likelihood of banking service usage among households (e.g. Baums, 1994, World Bank, 2007).

Robustness analysis

In the second step, a number of econometric adjustments were employed to check for the robustness of the results. First, the country fixed effects were controlled for. For this reason, the country dummy variables were included with Ukraine as the default. It is assumed that we have highly robust results if the coefficients driven from the full sample are mainly confirmed. We also hypothesize that household-level effects, along with social trust variables, do not become weaker because of the inclusion of the country fixed effect. The disadvantage of this technique is that it does not allow us to test for the robustness of country-level variables and is limited to testing for the robustness of household-specific characteristics.

Second, to rule out the possibility that social trust is capturing the efficiency of the legal system, we re-estimated the basic specification for the sample of countries with relatively low credit rights which are defined as credit rights below the median of 5 (Guiso et al., 2004). We hypothesize that higher levels of social trust will play a more important role in predicting the usage of banking services in countries with lower levels of legal enforcement than in the overall sample.

Third, to rule out the possibility that social trust is capturing the effect of higher levels of education, we re-estimated the model for the sample of countries with relatively low levels of education. A low level of education is defined as an education level below the mean of 3.4 (Guiso et al. 2004). We hypothesize that the marginal impact of social capital is higher among uneducated individuals, inasmuch as an uneducated individual may require greater levels of trust to make the same financial investment that a more highly educated person would make. Therefore, we expect that the effect of social capital will be higher in the sample of countries with relatively low levels of education than in the overall sample.

Simultaneous equations regression models

The simultaneous equations model with an instrumental variable was employed to address the problem of endogeneity associated with the possible bias effect of social trust on the use of banking services. It is noteworthy that a more developed financial system may improve the trust of people who may be encouraged to intermediate or function financially. Likewise, better access to financial services may encourage people to

participate in social organizations and better integrate into society given the possibility of organizing events that could be funded by financial institutions (Calderon et al. 2002). Therefore, it is reasonable to suspect the existence of reverse causality between social trust and access to banking services.

It is not easy to find the best instruments here, since instruments should be correlated with social trust, but uncorrelated with the error term in the main regression equation that estimates banking development. Therefore, we used two instrumental variables: the *soviet* dummy variable and the *religious fractionalization* variable (Calderon et al. (2002). The dummy variable for Post-Soviet Union countries is justified by the notion that transitional countries that used to be part of the same union might share cultural traits and a historical heritage that would have an effect on the level of trust in those countries, and that may be different from other transitional economies. The religious fractionalization variable is proposed to capture religious patterns not accounted for the soviet dummy variable. Using the LITS question “What is your religion?” this variable is calculated for each country as the sum of the squares of the fractions (shares) of the three largest religious origins (Muslim, Christian, and Atheist) in that country.

In addition, the binominal nature of the outcome variable and the impact variables pose an additional challenge beyond the formidable challenge of identifying an appropriate instrument. To address this challenge, two different models have been estimated to compare across methods as a way of corroborating the results. We begin with estimating the standard simultaneous equations (2SLS) model. Using the 2SLS allows us to perform standard tests to confirm that our instruments are correlated with social trust, but uncorrelated with the error term in the main regression equation (Wooldridge, 2002).

However, the 2SLS does not take into account the binary nature of social capital and bank usage variables. Consequently, the bivariate probit model, which explicitly takes into account the binominal nature of the outcome and impact variables, was estimated. In contrast to the 2SLS, a bivariate probit model is an appropriate method for estimating the simultaneous equations model when outcome and impact are binominal variables (Cameron and Trivedi, 2005). After the 2SLS confirmed that our instruments are correlated with social trust, but uncorrelated with the error term in the main regression equation, we estimated the bivariate probit with the same set of instrumental variables as in the 2SLS (Conway and Kutinova, 2006).

3. Results and discussions

Table 1 reports summary statistics and the simple correlation between the use of banking service indicators and social trust, along with a broad array of household-level as well as country-specific variables.

[Please insert Table 1 about here]

As was mentioned in the previous section of the paper, there are two indicators of banking development which were used as dependent variables in the regression models. The first measure is an indicator variable of whether or not a household has a checking account. The second measure is an indicator variable of whether or not a household owns a credit or deposit card from any commercial bank. On average, the percentage of households with bank accounts (37 percent) appears to be higher when compared with the share of households that hold a debit or credit card (31 percent).

In addition, Table 1 shows that the use of bank accounts and bank cards are positively correlated (0.62) with each other and that both indicators of banking development are positively linked with social trust (0.012 with bank accounts and 0.011 with bank cards), although these correlations are rather small.

3.1 Results of binominal probit models

[Please insert Table 2 about here]

Table 2 reports the marginal effects of probit estimates for the use of banking services. Panel (A) displays the marginal effects of the independent variables on the use of bank accounts and cards without taking the country-level variables into consideration. As shown, having trust in people increases the likelihood of having a bank account by about 1.5 percentage points, while having no statistically significant effect on the use of debit or credit cards. All household-level covariates are significant and in the predicted direction. Thus, residing in rural areas reduces the likelihood of having a bank account or bank card. On the contrary, having a higher level of household expenditures or owning a car increases the likelihood of having a bank account or card.

Country-level variables are added in equations in Panel (B). After controlling for country-level variables, the positive effect of trust on the probability of having a bank account increased to 2.3 percentage points. Furthermore, the effect of trust on using debit or credit cards is found to be statistically significant. Trusting people increased the probability of using a bank card by about 1.6 percentage points. Among country-level variables, better legal enforcement, greater GDP per capita and lower inflation are all significantly associated with higher levels of bank service utilization, both in the form of having an account and a bank card. In comparison, state ownership of banks shows a positive effect only on having a bank card.

3.2 Results of robustness analysis

[Please insert Table 3 about here]

How robust are the probit estimates of social trust on the use of banking services? To check the robustness of the results, Table 3 first displays the outcome of the probit models with country-fixed effects in Panel A. The results show that the positive relationship between social trust and the use of banking services remains significant. Having trust in people increases the likelihood of having a bank account and a bank card by about 8.4 and 1.1 percentage points respectively.

The results of probit models estimated for the samples of households with poor levels of education are reported in Panel B of Table 3. The results demonstrate that among the households with poor educational levels, social trust increases the probability of using a bank account and card by approximately 3.2 and 2 percentage points respectively. As explained in the previous section, it is expected that the effect of social trust on the use of banking services would be higher in the samples of countries with relatively low levels of education. Indeed, the obtained estimates of the social capital effects for countries with lower levels of education are higher than the estimates reported for the whole sample in Table 2.

The results of probit models estimated for the samples of households in countries where legal enforcement is not prompt are reported in Panel C of Table 3. In these countries, social trust increases the probability of using a bank account and card by approximately

3.8 and 3.5 percentage points respectively. Again as expected, the effect of social capital is higher in countries with lower levels of legal enforcement inasmuch as the obtained estimates of social capital effects are higher than the estimates reported for the whole sample.

Lastly, all covariates in Panels A, B, and C have the expected direction.

3.3 Results of the simultaneous equations regression models

[Please insert Table 4 about here]

Table 4 displays the results of the 2SLS and bivariate probit models. The results of the 2SLS are reported in the first two columns of the table. The upper section of the table presents the results of the main regression equation. The main finding is that after controlling for endogeneity, having social trust positively affects the propensity of having a bank account and bank card. The coefficient of the 2SLS is much higher than those of the binomial probit regression model reported above, although the standard errors are also much higher. Among household level variables, an increase in household expenditures and car ownership increases the likelihood of having a bank account and bank card. In contrast, living in a rural area has a negative effect. Among country level variables, improvement of credit rights and growth in GDP per capita lead to an increase in the propensity for bank account and card usage, while inflation shows a negative effect. Interestingly, the finding also confirms that state ownership of banks is positively associated with the use of banking services, although this association is rather negligible. The results of the first regression equation are reported in the lower section of the Table 4. Both instruments show a significant effect on social trust. This finding confirms the relevance of selected instruments.

The lowest rows of the table present the tests for the estimated 2SLS (Cameron & Trivedi, 2005; Wooldridge, 2002). The non-significant results of Sargan's test indicate that the selected instruments are uncorrelated with the error term in the main regression equation. The significant value of the Anderson test indicates that the instruments are adequate for identifying this equation. Likewise, significant results for the Wu-Hausman and Durbin-Wu-Hausman tests show the presence of endogeneity and confirm that an estimation of the simultaneous equations regression model would produce more consistent results than would single equation regression.

The results of the simultaneous equations bivariate probit regression in the form of marginal effects are reported in the last two columns of Table 4. The results suggest that social trust increases the probability of using banking services by approximately 70 percentage points. The results of bivariate probit are lower than the results obtained by the 2SLS, although standard errors in bivariate probit are also lower than in the 2SLS. In addition, it should be noted that all covariates in bivariate probit have the same sign as in the 2SLS. Finally, the significant result of the Likelihood Ratio test that is reported in the last row of the table signals the presence of endogeneity (Cameron & Trivedi, 2005). Consequently, estimating the bivariate probit instead of single equation probit appears to be appropriate.

4. Conclusion

In this paper, we aimed to assess the effect of social capital on the use of banking services in transitional countries. Combining the LITS micro data with aggregated economic data

across 28 transitional countries and Turkey, we found that social capital has a positive effect on the usage of banking services. This conclusion is robust to statistical adjustments and two simultaneous equation specifications with instrumental variables. Furthermore, we found that social capital matters even more in the countries with low levels of education and poor degrees of law enforcement. In addition, our results suggest that country-specific determinants such as GDP per capita, legal enforcement and inflation rates strongly affect the decisions of households with regard to using banking services. In contrast, we found that the effect of the bank ownership structure has either a very small or statistically non-significant impact on the use of banking services across households in transitional countries. Lastly, our results suggest that the probability of having households that use banking services is higher in urban areas and among the households with higher income and wealth.

From a policy standpoint, the empirical findings of this study suggest some ways in which households in transitional countries could be encouraged to use banking services. Our results demonstrate that transitional countries which suffer low levels of education and law enforcement should be compensated for them with greater social trust for the sake of higher financial inclusion among their households. Therefore, all policy efforts to address deficiencies in social capital and improve social trust should be of great priority in transitional countries where a strong legal enforcement and high levels of education are generally low. It is noteworthy that the impact of social trust would be even more salient if we consider the suggestion made by Putnam (1993) and La Part et al. (1997a) that a lack of social capital may negatively affect the functioning of existing formal institutions.

From a methodological standpoint, we demonstrate that strong endogeneity exists between the use of banking services and social trust. Consequently, ignoring endogeneity and estimating the single stage regression model will likely lead to biased results. Another interesting methodological result of our study is that although the literature commonly claims that choosing suitable instruments is difficult (e.g. Durlauf and Fafchamps, 2004; Grootaert et al. 2004), this study was able to identify some valid instruments with regard to social trust. As suggested by Knack and Keefer (1997) and Calderon et al. (2002), our study was able to confirm that some variables concerning the ethnic, cultural and religious diversity of the population could be used as valid instruments in the social capital literature.

Finally, two main limitations of our study should be mentioned. Because of data limitations, the level of social capital was gauged by a single question, and access to banking services was measured by only two questions, and hence the study results could be prone to measurement error. Moreover, there is a need for further research to help identify the key determinants that affect social trust and that will be useful in policy development.

References

- Aslund, A. (2002). *Building capitalism: the transformation of the former Soviet bloc*, New York: Cambridge University Press, Cambridge.
- Baums, T. (1994). *The German banking system and its impacts on corporate finance and governance*, Economic Development Institute of the World Bank, Washington, DC
- Beck, T. and Brown, M. (2011). 'Which households use banks? Evidence from the transition economies', *Working Paper No. 1295*. European Central Bank, Frankfurt, <http://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1295.pdf>
- Calderon, C., Chong, A. and Galindo, A. (2002). 'Development and efficiency of the financial sector and links with trust: cross country evidence', *Economic Development and Cultural Change*, 51(1), pp. 189-204.
- Cameron, C. and Trivedi, P. (2005). *Microeconometrics: methods and applications*, Cambridge University Press, New York: NY.
- Coleman, J. (1988). 'Social capital in the creation of human capital', *The American Journal of Sociology*, 54, pp. 95-120.
- Conway, K. and Kutinova, A. (2006). 'Maternal health: does prenatal care make a difference?', *Health Economics*, 15(5), pp. 461-88.
- Durlauf, S. and Fafchamps, M. (2004). 'Social capital', *NBER Working Paper Series no. 10485*, Cambridge, MA, <http://www.nber.org/papers/w10485>.
- European Bank for Reconstruction and Development. (2007). *Life in transition: A survey of people's experiences and attitudes*, United Kingdom, London.
- Fukuyama, F. (1995). *Trust: the social virtues and the creation of prosperity*, New York: Free Press.
- Greene, W. (1997). *Econometric analysis*, Third Edition, Upper Saddle River, NJ: Prentice Hall.
- Grootaert, C. (1998). 'Social capital: the missing link', *Social Capital Initiative Working Paper no. 3*, World Bank, Washington, DC, <http://siteresources.worldbank.org/INTSOCIALCAPITAL/Resources/Social-Capital-Initiative-Working-Paper-Series/SCI-WPS-03.pdf>
- Grootaert, C., Narayan, D., Jones, V. and Woolcock, M. (2004). 'Measuring social capital: an integrated questionnaire', *World Bank Working Paper, no. 18*. Washington, DC, http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2004/03/23/000160016_20040323162541/Rendered/PDF/281100PAPER0Measuring0social0capital.pdf
- Guiso, L, Paola, S. and Luigi Z. (2004). 'The role of social capital in financial development', *American Economic Review*, 94(3), pp. 526-56.
- Karlan, D. (2007). 'Social connections and group banking', *Economic Journal*, 117, pp. 52-84.
- Knack, S. and Keefer, P. (1997). 'Does social capital have an economic payoff? A cross country investigation', *Quarterly Journal of Economics*, 112(4), pp. 1251-1288.

- Knack, S. and Zack, P. (2001). 'Trust and growth', *Economic Journal*, 111(470), pp. 295-321.
- La Porta, R., Lopez de Silanes, F., Shleifer, A. and Vishny, R. (1997). 'Legal determinants of external finance', *Journal of Finance*, 52(3), pp. 1131-1150.
- Putnam, R. (1993). *Making democracy work: Civic traditions in modern Italy*, Princeton, NJ: Princeton.
- Sharma, M. and Zeller, M. (1998). 'Repayment performance in group-based credit programs in Bangladesh: An empirical analysis', *World Development*, 25(10), pp. 1731-1742.
- Sunovate. (2006). *Life in Transition Survey (LITS) 2006. A brief report on observations, experiences and methodology from the survey*, Sunovate, Nicosia, Cyprus.
- Van Bastelaer, T. and Leathers, H. (2006). 'Trust in lending: social capital and joint liability seed loans in Southern Zambia', *World Development*, 34(10), pp. 1788- 1807.
- Wooldridge, J. (2002). *Econometric analysis of cross-section and panel data*, MA: MIT Press, Cambridge, MA.
- World Bank. (2007). *Finance for all? Policies and pitfalls in expanding access, A World Bank Policy Research Report*, Washington, DC,
<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPRRS/EXTFINFORALL/0,,contentMDK:21534425~menuPK:4099726~pagePK:64168098~piPK:64168032~theSitePK:4099598,00.html>

Table 1
Summary Statistics and Correlations

	Panel A: Summary Statistics				Panel B: Correlation analysis	
	Mean	SD	Min	Max	Bank accounts	Debit/credit cards
<i>Individual and household-level variables</i>						
Bank accounts	0.37	0.48	0.00	1.00	1.0000	
Debit/credit cards	0.31	0.46	0.00	1.00	0.6194**	1.0000
Trust in people	0.30	0.46	0.00	1.00	0.0122**	0.0109*
Female	0.58	0.49	0.00	1.00	-0.0177**	-0.0173**
Minority	0.10	0.30	0.00	1.00	-0.0558**	-0.0429**
Age	46.42	17.52	18.00	97.00	-0.0441**	-0.1267**
Education	0.49	0.50	0.00	1.00	0.1825**	0.1863**
Employment	0.44	0.50	0.00	1.00	0.1545**	0.2063**
Rural	0.43	0.49	0.00	1.00	-0.1346**	-0.1881**
Expenses	7.50	0.91	0.98	10.25	0.5054**	0.4825**
Car	0.41	0.49	0.00	1.00	0.3528**	0.3314**
<i>Country-level variables</i>						
Credit rights	5.47	1.82	1.00	9.00	0.1741**	0.0835**
State ownership	13.71	19.72	0.00	70.20	-0.1448**	-0.0841**
Inflation	6.37	4.27	0.50	16.50	-0.2551**	-0.2306**
GDP per capita	8.12	1.03	5.90	9.81	0.1308**	0.1732**

Note: Data are rounded up

* Statistical significance at the .10 level

** Statistical significance at the .05 level

Table 2

The effect of social trust on the use of banking services (marginal effects)

	Panel A		Panel B	
	Account	Card	Account	Card
<i>Individual and household-level variables</i>				
Trust in people	0.0150** (0.0072)	0.0076 (0.0066)	0.0239*** (0.0073)	0.0161** (0.0066)
Female	0.0323*** (0.0067)	0.0320*** (0.0061)	0.0373*** (0.0068)	0.0342*** (0.0061)
Age	0.0020*** (0.0002)	-0.0008*** (0.0002)	0.0014*** (0.0002)	-0.0015*** (0.0002)
Education	0.0548*** (0.0069)	0.0451*** (0.0063)	0.0823*** (0.0070)	0.0681*** (0.0063)
Minority	-0.0519*** (0.0106)	-0.0296*** (0.0097)	-0.0583*** (0.0106)	-0.0405*** (0.0095)
Employment	0.0503*** (0.0073)	0.0818*** (0.0066)	0.0590*** (0.0074)	0.0845*** (0.0066)
Rural	-0.0263*** (0.0069)	-0.0923*** (0.0061)	-0.0264*** (0.0070)	-0.0868*** (0.0061)
Expenses	0.2978*** (0.0048)	0.2473*** (0.0043)	0.2638*** (0.0049)	0.2202*** (0.0044)
Car	0.1816*** (0.0072)	0.1390*** (0.0067)	0.1776*** (0.0072)	0.1344*** (0.0067)
<i>Country-level variables</i>				
Credit rights			0.0369*** (0.0020)	0.0179*** (0.0017)
State ownership			0.0003 (0.0002)	0.0019*** (0.0002)
Inflation			-0.0151*** (0.0010)	-0.0137*** (0.0010)
GDP per capita			0.0255*** (0.0039)	0.0547*** (0.0036)
<i>Pseudo R2</i>	0.2591	0.261	0.2848	0.2849
<i>Number of observations</i>	24969	24964	24969	24964

Notes. The standard errors are shown in parentheses.

* Significance at .10 level for two-tailed test.

** Significance at .05 level for two-tailed test.

*** Significance at .01 level for two-tailed test.

Table 3

The effect of social trust on the use of banking services in different model specifications (marginal effects)

	Panel A		Panel B		Panel C	
	Account	Card	Account	Card	Account	Card
<i>Individual and household-level variables</i>						
Trust in people	0.0842*** (0.0233)	0.0116* (0.0066)	0.0324*** (0.0116)	0.0203* (0.0109)	0.0384*** (0.0126)	0.0354*** (0.0126)
Female	0.0508*** (0.0218)	0.0260*** (0.0061)	0.0237** (0.0102)	0.0257*** (0.0095)	-0.0049 (0.0117)	0.0220* (0.0119)
Age	-0.0075*** (0.0007)	-0.0041*** (0.0002)	0.0013*** (0.0003)	-0.0015*** (0.0003)	0.0011*** (0.0004)	-0.0022*** (0.0004)
Education	0.2447*** (0.0231)	0.0693*** (0.0065)	0.1088*** (0.0108)	0.0850*** (0.0100)	0.0434*** (0.0123)	0.0483** (0.0125)
Minority	-0.1451*** (0.0366)	-0.0372*** (0.0095)	-0.0731*** (0.0153)	-0.0492*** (0.0145)	-0.0489*** (0.0154)	-0.0381** (0.0164)
Employment	0.2397*** (0.0237)	0.0892*** (0.0067)	0.0101 (0.0111)	0.0651*** (0.0104)	0.0272*** (0.0126)	0.0207 (0.0127)
Rural	-0.1823*** (0.0227)	-0.0969*** (0.0062)	-0.0334*** (0.0104)	-0.1207*** (0.0095)	-0.0843*** (0.0113)	-0.1227*** (0.0114)
Expenses	0.4469*** (0.0181)	0.1372*** (0.0052)	0.3056*** (0.0077)	0.2679*** (0.0070)	0.1015*** (0.0092)	0.1276*** (0.0094)
Car	0.4689*** (0.0228)	0.1202*** (0.0068)	0.1862*** (0.0109)	0.1599*** (0.0103)	0.1169*** (0.0132)	0.0864*** (0.0129)
<i>Country-level variables</i>						
Credit rights			0.0550*** (0.0038)	0.0083** (0.0035)	-0.3991*** (0.0193)	-0.2468** (0.0170)
State ownership			0.0000 (0.0004)	0.0017*** (0.0003)	-0.0227*** (0.0014)	-0.0144*** (0.0013)
Inflation			0.0067** (0.0027)	0.0003 (0.0025)	-0.0534*** (0.0020)	-0.0405*** (0.0018)
GDP per capita			0.1284*** (0.0086)	0.0663*** (0.0080)	0.1392*** (0.0107)	0.0639*** (0.0108)
<i>Pseudo R²</i>	0.2591	0.375	0.3278	0.3108	0.3334	0.2617
<i>Number of observations</i>	24969	24964	11424	11422	5921	5920

Notes. The standard errors are shown in parentheses.

The country fixed effects are omitted to conserve the space.

* Significance at .10 level for two-tailed test.

** Significance at .05 level for two-tailed test.

*** Significance at .01 level for two-tailed test.

Table 4

The effect of social capital on the use of banking services - IV Regression Results

	Standard simultaneous equations (2SLS)		Bivariate probit (biprobit)	
	Bank Account	Credit Card	Bank Account	Credit Card
<i>Main equation for Using Bank Services is estimated</i>				
Trust in people	3.1819*** (0.6486)	1.5607*** (0.3505)	0.6925*** (0.0128)	0.6990*** (0.0231)
Rural	-0.0364* (0.0204)	-0.0808*** (0.0110)	-0.0093* (0.0137)	-0.0289*** (0.0194)
Female	-0.0007 (0.0206)	0.0148 (0.0111)	-0.0018 (0.0137)	0.0012 (0.0146)
Age	-0.0002 (0.0006)	-0.0020*** (0.0003)	-0.0001 (0.0004)	-0.0007*** (0.0005)
Education	0.0055 (0.0237)	0.0249** (0.0128)	0.0016 (0.0156)	0.0036 (0.0180)
Minority	-0.0391 (0.0316)	-0.0293* (0.0170)	-0.0079 (0.0219)	-0.0090 (0.0226)
Employment	-0.0467 (0.0292)	0.0356** (0.0158)	-0.0162*** (0.0153)	-0.0028 (0.0202)
Expenses	0.1916*** (0.0128)	0.1654*** (0.0069)	0.0457*** (0.0246)	0.0606*** (0.0356)
Car	0.1570*** (0.0218)	0.1353*** (0.0117)	0.0278*** (0.0211)	0.0343*** (0.0253)
Credit rights	0.0685*** (0.0092)	0.0357*** (0.0050)	0.0159*** (0.0051)	0.0143*** (0.0048)
State ownership	0.0026*** (0.0008)	0.0026*** (0.0004)	0.0007*** (0.0004)	0.0012*** (0.0005)
Inflation	-0.0220*** (0.0036)	-0.0148*** (0.0020)	-0.0057*** (0.0022)	-0.0071*** (0.0029)
GDP per capita	0.0588*** (0.0135)	0.0668*** (0.0073)	0.0150*** (0.0080)	0.0249*** (0.0115)
<i>First (instrumented equation) for Social Trust is estimated</i>				
Rural	0.0043 (0.0061)	0.0043 (0.0061)		
Female	0.0100* (0.0060)	0.0102* (0.0060)		
Age	0.0003* (0.0002)	0.0003* (0.0002)		
Education	0.0184*** (0.0063)	0.0185*** (0.0063)		
Minority	-0.0059 (0.0097)	-0.0058 (0.0097)		
Employment	0.0292*** (0.0064)	0.0295*** (0.0064)		
Expenses	-0.0029 (0.0040)	-0.0027 (0.0040)		
Car	0.0014 (0.0066)	0.0009 (0.0066)		
Credit rights	-0.0120***	-0.0120***		

	(0.0018)	(0.0018)		
State ownership	-0.0009***	-0.0009***		
	(0.0002)	(0.0002)		
Inflation	0.0032***	0.0032***		
	(0.0008)	(0.0008)		
GDP per capita	-0.0095***	-0.0095***		
	(0.0036)	(0.0036)		
Soviet	0.0182***	0.0182***		
	(0.0064)	(0.0064)		
Religious fractionalization	-0.0757***	-0.0751***		
	(0.0176)	(0.0176)		
<i>Number of observation</i>	24969	24964	24969	24964
<i>Testing overidentification</i>				
Sargan's test (p-value χ^2)	0.8366	0.1040		
<i>Testing adequacy of instruments</i>				
Anderson correlation LM statistic χ^2	25.58***	25.31***		
<i>Testing endogeneity</i>				
Wu-Hausman <i>F</i> test	342.06 ***	84.02**		
Durbin-Wu-Hausman χ^2 test	337.64 ***	83.79***		
Wald test for endogeneity χ^2			162.08***	93.23***

Notes. The standard errors are shown in parentheses.

The estimates for biprobit models are shown in marginal effects.

* Significance at .10 level for two-tailed test.

** Significance at .05 level for two-tailed test.

*** Significance at .01 level for two-tailed test.

Appendix A

Table A.1
Variable Description and Data Sources

Variable	Description	Source	Year
<i>Individual and household-level variables</i>			
Check accounts	Whether a household member has a bank account. 1=yes, 0=no.	LITS	2006
Debit/credit cards	Whether a household member holds a debit or credit card. 1=yes, 0=no.	LITS	2006
Trust in people	Would a respondent say that today most people can be trusted, or that he/she can't be too careful in dealing with people? 1=can be trusted, 0=otherwise.	LITS	2006
Rural	Whether a household lives in rural area. 1=yes, 0=otherwise.	LITS	2006
Female	Whether the gender of a respondent is female. 1=yes, 0=no.	LITS	2006
Minority	Whether a respondent is perceived to be member of minority. 1=yes, 0=no.	LITS	2006
Age	Age of a respondent.	LITS	2006
Education	Whether a respondent has tertiary-level education or received any professional training. 1=yes, 0=otherwise.	LITS	2006
Employment	Whether a respondent had formally employed in the past. 1=yes, 0=otherwise.	LITS	2006
Expenses	Per capita total household monthly expenses in USD (Log)	LITS	2006
Car	Whether a household member holds a car. 1=yes, 0=no.	LITS	2006
<i>Country-level variables</i>			
Credit rights	Legal rights index for secured creditors, scale 0-10.	DB	2006
State ownership	Asset share of state controlled banks in domestic banking system (%)	ERBD	2005
Inflation	Increase of consumer prices (annual average)	EBRD	2003-05
GDP per capita	GDP per capita in USD per year (Log)	EBRD	2005