Pre-Crisis and Post-Crisis Trust in Banks: Lessons from Transitional Countries

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Abstract

Trust in banks appears to be an essential element of well-functioning of macroeconomic systems, in general, and of financial markets, in particular. We study what factors determine the level of trust in banks before and after the 2007-08 financial crisis and how this crisis reshaped banking trust in 29 transitional countries. We find that younger, rural, educated, banked and generally trusting people tend to have higher confidence towards banks both in pre-crisis as well as post-crisis periods. Among country-level covariates, growth rate of GDP and Rule of Law remain positively and significantly associated with banking trust in both periods, while foreign bank participation starts to be detrimental to the trust after the crisis. In addition to 'objective' variables, we find that 'subjective' factors such as respondent's personal experience with the crisis appear to strongly influence their trust in banks. Finally, after controlling for the "objective" variables, we find that the financial crisis has caused a decline in trust which is statistically significant but not dramatic or completely exceptional drop. Our findings indicate that the financial crisis has temporary impact on peoples' trust in banks since pulling back the rate of GDP growth tends to fully recover banking trust in transitional countries.

Keywords: trust in banks, financial crisis, transitional countries

JEL-Classification: G01, G21, P20, Z13

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1. INTRODUCTION

After Coleman (1988) and Putnam's (1993) seminal papers, the trust has become increasingly popular in the economics literature and many arguments have been put forward as to why trust may improve economic performance. Economists start to point trust as a very important lubricant of a social system that has economic value and leads to high efficiency in society (Fukuyama, 1996). Increasing the number of mutually beneficial traders, addressing collective action problems, solving principal-agent problem, and improving information flows can be particularly emphasized as major channels through which trust fosters the development.

Among many, economic benefits from higher cooperation that trust delivers, is regarded as a main channel of trust's contribution to development (La Porta et al., 1997). As argued in the literature, higher trust associates with greater cooperation and the latter leads to better economic performance (La Porta et al., 1996, Fukuyama, 1996). Fukuyama (1996) suggests that cooperation through trust tends to be more effective substitute to cooperation through family ties. He stresses that large firms will prevail in high-trust societies in contrast to low-trust societies where smaller family firms are dominating.

While generalized trust is important for overall economic performance, trust in banks appears to be even more crucial element particularly for well-functioning of financial systems. Guiso et al. (2009) argue that financial markets require particularly high level of trust mainly because people spend their money in exchange for financial promises. Decisions of people about using banking services are heavily influenced by trust in institutions that provide these services. Peoples' trust levels in banks show in what extent they tend to cooperate with those institutions in order to produce more efficient outcomes and to avoid non-cooperative traps. More trusting individuals are more likely to buy stock, and conditional on buying stock, they will invest a larger share of their wealth in it.

Higher trust in the financial markets can promote recovery and increase the perceived credibility of post-crisis reform. As a more immediate threat, declining trust in financial markets can trigger financial panics and market crisis and therefore, must be regarded as very important element of recovery plan. Diamon and Dybvig's (1983) canonical model shows that systematic banking crisis will be more likely in places where investor confidence is low. In addition, as argued by Guiso et al. (2004) the lack of trust amplifies the effect of costly participation in financial markets.

Financial crisis may decrease people trust in financial institutions, lead some people to limit or stop cooperation with banks (i.e. withdraw deposits), and thereby exacerbate the impact of the crisis. Caprio (2005) stresses distrust in banks as one of the great and unmeasured costs of the crisis. Furthermore, financial crisis may lead to changes in

preference for political and economic systems and ultimately cause a decline in support for democracy and free markets (Grosjean et al., 2011). Financial crisis may even lead to drop in general trust levels of people and can be regarded as a cause of "trust crisis". For example, Alesina and La Ferrara (2002) find that individuals who have recently suffered a trauma or a financial loss are generally less trusting. Giuliano and Spilimberge (2009) find that individuals who grew up during periods of macroeconomic volatility are more likely to support government redistribution and to believe that luck has more to do with success than effort.

Despite the importance of peoples' trust in determining the costs of financial crisis (i.e. 2007-08 crisis), it remains largely unstudied. A few empirical studies were conducted in the case of advanced countries which show a bit contradictory results when it comes to its short-term versus long-term consequences. For example, Graham and Narasimhan (2005) argue that corporate managers that have lived through the Great Depression in USA choose a more conservative capital structure with less leverage even after economic condition improves. A cross-country study conducted by Osili and Paulson (2009) stresses that experiencing a systematic banking crisis has important and long-term effects on individuals' behavior in USA. They suggest that individuals who have experienced a systematic banking crisis in their countries of origin are less likely to use banking services in USA compared to otherwise similar individuals from the same country that have not lived through a crisis. Although Knell and Stix (2009) also find a detrimental impact of crisis on people's confidence in Austrian banks, they fail to claim that this influence is long-lasting or permanent.

As we see, there is a limited scope of empirical literature on the role of crisis in confidence towards banks, and our study seems to be the first to analyze trust in banks across transitional countries where the economies were among the hardest hit by the global financial crisis (Berglof and et al. 2009). According to European Bank for Reconstruction and Development (EBRD, 2010), the GDP of transitional economies contracted by 5.2 percent and registered unemployment increased in 2009. Despite those great contractions, empirically, the evidence on the impact of the crisis on peoples' trust in banks is also inconclusive.

Combining responses from a survey of over 29,000 people in 29 transition economies both in 2006 and 2010, our study complements and extends the ongoing discussion on trust in banks in following three ways. First, it provides guidance into the origins of people confidence in banks in the context of transitional countries by studying its main determinants. Having a diverse sample of 29 former socialist countries of Central and Eastern Europe, the Caucasus and Central Asia, allows us to robustly investigate the determinants of banking trust in transitional economies. Second, the study answers to question: 'are these determinants different before and after global financial crisis?'. Finally, we study the role of 2007-2008 global financial crisis on the decline of trust in

banks across transitional countries. Here we also try to understand whether this drop constitutes a transitory phenomenon that will revert over time or this decline represents a permanent shift in the level of trust.

Our findings indicate that younger, rural, university educated, banked and generally trusting people appear to have higher confidence towards banks both in pre-crisis as well as post-crisis periods. Among country-level variables, growth rate of GDP and Rule of Law remain positively and significantly associated with banking trust in both period, while foreign bank entry starts to be detrimental to the trust after the crisis. In addition to 'objective' variables, we find that 'subjective' factors such as respondent's personal experience with the crisis appear to strongly influence their trust in banks. We also find that financial crisis has temporary and small impact on peoples' trust in banks across the households in transitional countries. For financial markets in transitional countries it may take shorter time to recover pre-crisis trust of people in banks. Simply, pulling back the overall rate of growth in economy will largely recover population's trust in banks. This again shows that in contrast to advanced countries, post-crisis drop in trust of transitional economies does not represent a structural break involving a permanent decrease in it.

The remainder of the paper is organized as follows. We introduce the data and methodology in the next section. Section 3 presents the empirical results. Finally, section 4 concludes the paper.

2. DATA AND METHODOLOGY

2.1.Data source

Our main source of data is the micro file of two rounds of the Life-in-Transition (henceforth, the LIT) survey which was implemented by the European Bank of Reconstruction and Development. First round of the data collection was in 2006, while the second one was in late 2010 (EBRD, 2007; EBRD, 2011). The timing of the LIT data collection is ideal to measuring the impact of the financial crisis on trust in banking institutions. The first round of the survey collected data on trust before the crisis started and the second one after the main wave of crisis had already hit transitional countries. Since the complete description of the LIT's methodology, including a report on observations and a discussion of the experiences with data collection is disclosed elsewhere (EBRD, 2007; EBRD, 2011), we limit ourselves to a succinct discussion of the data set below.

The main goal of conducting the LIT surveys was to collect directly comparable information about overtime changes in individuals' and household's experiences, behaviors, and attitudes across the set of the transitional economies. Each round of it is a cross-sectional survey which collected information on a broad range of topics, such as socio-demographic characteristics of respondents (e.g. age, gender, and educational

attainments) and households (e.g. dwelling ownership and rural/urban place of residency). Importantly, the LIT also collected the data about possession of a bank account, trust in banks, and social capital in form of trust in people. The data is collected through face-to-face interviews with trained interviewers.

The most questions are the same across two rounds. However, round of 2010 also includes new module covering several question specifically design to gauge the effect the global crisis. The crisis impact module of LIT-2010 survey also provides insights into the various channels through which households were hit and the coping mechanisms that they adopted.

The first round of LIT collected the information from 1,000 respondents in 28 transitional countries of Eastern and Central Europe, the Caucasus and the Central Asia (excluding Turkmenistan)[3] and Turkey. The second round of the LIT conducted in 2010 collected the information from approximately 1,000 to 1,599 respondents in the same set of the transition countries (see Table A.1 in the appendix).

In addition to two rounds of LIT surveys, we use country-level statistics on the macro, financial and institutional variables that might affect the degree of trust in banks. Our macro and banking indicators come from the EBRD country statistics, while measure of quality of institutions is from the World Bank governance indicators (World Bank 2006 & 2010). Detailed discussion of outcome and explanatory variables can be seen below.

Outcome variable

Our outcome variable is people's *Trust in Banks* and is gauged in the LIT by asking respondents the question "To what extend you trust in banks and financial system?" The answers coded as Complete distrust =1, Some distrust = 2, Neither trust nor distrust = 3, Some trust = 4, Complete trust = 5.

Some authors argued against using such a "subjective" measure of trust (Glaeser et al. 2000; Akerlof and Shiller 2009) and proposed to employ more "objective" measures, for instance, possession of bank account or having higher usage of bank services (Osli and Paulson, 2009; Beck and Martin, 2011). However, using objective measures of trust can be even more problematic. The main problem with such objective measure is that it does not necessarily reflect the true confidence, since people choice can be either voluntary or involuntary. For example, an individual can have a checking account, but may not trust in banks (involuntary use of banking services). Alternatively, a person may not have an

[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.

account (involuntary disuse of banking services), but may have a high confidence towards banks.

In the light of above mentioned pros and cons, we employed a subjective measure of trust in banks.

Explanatory variables

The availability of individual and household-level data from the LIT allows us to control for factors that are likely to influence people trust in banks. Individual-level and household-specific variables like *Age, Female, University, House Owner* and *Rural* are selected since all these variables found to be important determinants of banking trust in previous studies (Osli and Paulson, 2009; Knell and Stix, 2009; Beck and Martin, 2011). Our *Age* variable shows the actual age of the respondent in years. *Female* is coded female =1, otherwise = 0. *University* is coded into a binary variable based on the highest level of academic qualification attained: bachelor level or higher = 1, otherwise = 0. The variable *House Owner* shows whether a household has its own dwelling or not and is coded yes=1, no=0. *Rural* is coded rural=1 if households residence is in rural area, otherwise=0.

Individual's experience and close collaboration with financial institutions can be seen as a source of their confidence towards those institutions (Malmendier and Nagel, 2009; Putnam, 2000). Therefore, we added a variable reflecting an existence of people's checking account in a commercial bank. Our *Bank Account* variable shows whether a household member has a bank account and is coded as yes=1, no=0.

It is expected that being generally trustful person can increase the likelihood of trusting more in banks as well (Knell and Stix 2009). In this regard, we want to know the effect of social trust in confidence towards banks by using *Trust in People* variable which is coded as Complete distrust =1, Some distrust = 2, Neither trust nor distrust = 3, Some trust = 4, Complete trust = 5.

In addition to LIT variables, we employ three country-level indicators that can largely influence the trust in banks. These variables are collected separately for two survey periods (LIT-2006 and LIT-2010) and include *GDP growth, Rule of Law* and *Bank Foreign Ownership*. *GDP Growth* shows average growth rate of real GDP before LIT-2006 (2004-2005) and before LIT-2010 (2008-2009). *Rule of Law* reflects overall institutional development in transitional countries and measure average rule of law index of the Worldwide Governance Indicators of the World Bank for 2004-2005 and 2008-2009 respectively. The index takes values from -2.5 to 2.5, with higher score reflecting better quality institutions. *Bank Foreign Ownership* shows the foreign ownership in banking system, which is also averaged for 2004-2005 and 2008-2009 respectively.

Finally, we use a set of subjective variables that are expected to be important determinants of trust (Rainer and Siedler, 2009; Knell and Stix, 2009). According to Ellison and Fudenberg (1993) and Roth and Erev (1995), information gained from personal experience has a greater effect on behavior relative to other sources on information. Therefore we use several relevant variables that reflect respondent's and its household's experience with the crisis. These variables include *Crisis Effect, Closed Business, Lost Job, Lost Wage, Lost Foreign Income,* and *Lost Work Hours*. All these variables are available in LIT-2010 micro file. *Crisis Effect* shows how much did the crisis affected the household and is coded as a great deal=1, a fair amount=2, just a little=3 and not at all=4. *Closed Business* reflects whether family business closed because of the crisis and is coded as yes=1, no=0. *Lost Job* shows whether any member of household lost a job and is coded as yes=1, no-0. *Lost Wage* reflects whether a respondent's wage reduced or delayed and is coded as yes=1, no=0. *Lost Foreign Income* shows whether flow of remittances declined and/or family member returned from foreign country and is coded as yes=1, no=0. Finally, *Lost Work Hours* depicts whether the crisis decreased the working hours of respondent and is coded as yes=1, no=0.

Overall, descriptive statistics for all explanatory variables are shown in Table A.2 in the appendix.

2.2.Methodology

The methodology of our study consists of several consecutive steps. First, we use descriptive methods to portrait and compare our outcome variable, trust in banks and financial system, across the years. Specifically, t-test is used to compare the level of trust before the crisis in 2006 and after the crisis in 2010. Although our outcome variable is ordered categorical by nature, in both years it appears to be normally distributed as graphically shown in Figure 1. Furthermore, the formal test of normality conducted for 2006 round demonstrates that the trust in bank is normally distributed from the strict statistical point of view (Chi-squared = 5711; p = 0.000). Similarly, trust in bank is distributed normally in 2010 round (Chi-squared = 6152; p = 0.000).

[Insert Figure 1 about here]

Second, we analyze the determinants of trust in banks by estimating several OLS models for 2006 and 2010 rounds separately. In the first model and second models, we include individual and household-level variables only in order to avoid overloading the specification. In the third and fourth models, we add controls for country-specific covariates, namely, GDP growth, Rule of Law and Bank Foreign Ownership. In

Third, we attempt to explain the role of the financial crisis in the drop of trust. We combine 2006 and 2010 rounds in a unified data set and estimate a regression model with

individual and household-level variables, country-specific covariates, along with crisis-related subjective controls and time dummy for 2010.

Fourth, we use Blinder-Oaxaca decomposition to decompose the change in banking trust after the crisis. The decomposition allows us to estimate what share of the total variation in the difference of bank trust overtime can and cannot be explained by explanatory variables.

Econometrically, in the second step, we estimate OLS model assuming that individual's underlying response can be described by the following equation:

$$\boldsymbol{Y_{i,k} = \alpha + H(X'\beta) + C(Z'\delta) + \varepsilon} \quad \textbf{(1)}$$

where $Y_{i,k,t}$ denotes trust in banks by respondent i in country k, $H(X'\beta)$ is the vector of individual and households-level independent variables, $C(Z'\delta)$ is the vector of country-specific explanatory variables, and ε is a disturbance parameter which is assumed to be normally distributed.

In the third step, we run two set of regressions as follows:

$$\boldsymbol{Y_{i,k} = \alpha + H(X'\beta) + C(Z'\delta) + S(V'\Omega) + \varepsilon} \quad \textbf{(2)}$$

and

$$\boldsymbol{Y_{i,k} = \alpha + H(X'\beta) + C(Z'\delta) + TimeDummy + \varepsilon} \quad \textbf{(3)}$$

Where $S(V''\Omega)$ represents the vector of subjective or perceptional variables, that actually show the degree and the ways of personal experience with the crisis. *TimeDummy* shows the period of the sample (pre-crisis and post-crisis period) and allows us to investigate the role of crisis in the drop of banking trust.

Finally, in the fourth step, using the Blinder-Oaxaca decomposition algorithm, we investigate the effects of endowments and coefficients effects on the drop of banking trust (Jann, 2008). The Blinder-Oaxaca decomposition equation can be written as follows:

$$\boldsymbol{\overline{Y}_b - \overline{Y}_a = [\overline{E}_b - \overline{E}_a]'\gamma_b + \overline{E}'_a(\gamma_b - \gamma_a) + [\overline{E}_b - \overline{E}_a]'(\gamma_b - \gamma_a)} \quad \textbf{(4)}$$

where $\overline{Y}_b$ and $\overline{Y}_a$ are expected value of banking trust before and after crisis respectively, $\bar{E}_b$ and $\bar{E}_a$ are vector of average endowments (socio-economic characteristics) before and after crisis respectively, and γ_b and γ_a are vector of parameters before and after crisis respectively. In the equation, $[\bar{E}_b - \bar{E}_a]'\gamma_b$ is the part that is explained by changes in the endowments or socio-economic characteristics, while the second two terms represent the unexplained part which come both from the changes in the coefficients (including differences in the intercept) and an interaction effect. This is

"threefold" decomposition and the explanation stems from Daymont and Andrisani's (1984) following extension of the decomposition:

$$[\overline{\boldsymbol{E}}_{\boldsymbol{b}} - \overline{\boldsymbol{E}}_{\boldsymbol{a}}]'\boldsymbol{\gamma}_{\boldsymbol{b}} = [\boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{b}}(\overline{\boldsymbol{Y}}_{\boldsymbol{b}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{b}}) - \boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{b}}(\overline{\boldsymbol{Y}}_{\boldsymbol{a}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{a}})]$$

$$\overline{\boldsymbol{E}}'_{\boldsymbol{a}}(\boldsymbol{\gamma}_{\boldsymbol{b}} - \boldsymbol{\gamma}_{\boldsymbol{a}}) = [\boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{b}}(\overline{\boldsymbol{Y}}_{\boldsymbol{a}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{a}}) - \boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{a}}(\overline{\boldsymbol{Y}}_{\boldsymbol{a}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{a}})]$$

$$[\overline{\boldsymbol{E}}_{\boldsymbol{b}} - \overline{\boldsymbol{E}}_{\boldsymbol{a}}]'(\boldsymbol{\gamma}_{\boldsymbol{b}} - \boldsymbol{\gamma}_{\boldsymbol{a}}) =$$
$$[\boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{b}}(\overline{\boldsymbol{Y}}_{\boldsymbol{b}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{b}}) - \boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{a}}(\overline{\boldsymbol{Y}}_{\boldsymbol{b}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{b}})] + [\boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{b}}(\overline{\boldsymbol{Y}}_{\boldsymbol{a}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{a}}) - \boldsymbol{E}\boldsymbol{\gamma}_{\boldsymbol{a}}(\overline{\boldsymbol{Y}}_{\boldsymbol{a}} \mid \overline{\boldsymbol{E}}_{\boldsymbol{a}})]$$

The first line of the above decomposition equation (4) provides us with the overall characteristics effects. However, in our study we are also interested in detailed decomposition which can give us the detailed contributions of each single predictor. For example, we are particularly interested in evaluating the trust level gap due to differences in the crisis-related indicator such as real GDP growth. Therefore, we employ a detailed decomposition for the explanatory component of the equation (4), which is very easy to implement because the total component is a simple sum over the individual contributions (Jann, 2008).

3. EMPIRICAL RESULTS

3.1.Descriptive analysis

First, we start to employ some descriptive analysis in order to understand in what extend the peoples' trust levels in banks have been changed over the crisis period. A close look at the results of Panel A of Table 1 reveals that the trust in banks dropped after the crisis. For example, people who have at least some trust in banks accounted for 47 percent of respondents in 2006, while in 2010 only 40 percent of respondents reported that they have some or complete trust in banks. In contrast, people with some or complete distrust increased from 29 percent in 2006 to about 34 percent in 2010. Although the magnitudes of these changes are not that large, they are found to be statistically significant. The formal t-test demonstrates that distribution of trust in banks in 2010 is significantly different from that in 2006 (t=13.60; p=0.000).

[Insert Table 1 about here]

Using Panel B of Table 1, we can highlight some interesting properties of the level of trust across transitional countries and its change throughout the crisis. Panel B shows that trust in banks and its change over time differs widely across the countries. For example, respondents from Central Asian transitional countries generally report higher trust in banks compared to other economies. On average, more than half of the population of Kyrgyzstan, Tajikistan and Uzbekistan show some or complete confidence in banks. In addition, in the whole sample the highest-trust country is found to be Estonia, where

almost 72 percent and 63 percent of respondents believe that banks can be trusted in 2006 and in 2010 respectively. In contrast, countries such as Russia, Ukraine, Moldova, Yugoslavia and Bulgaria appear to be on the bottom of the list when it comes to trusting banks in both periods.

Panel B of Table 1 also allows us to investigate which countries observed the highest as well as lowest drop in trust after the crisis. A close look at the results reveals that there is a contrast between the Eastern Europe and the rest of the transitional countries in terms of post-crisis decline in banking trust. Thus, the impact of the crisis seems to be much higher in Eastern Europe transitional countries compared to others. For example, the level of peoples' some or complete trust in bank went down by 26, 24 and 23 percentage points in Romania, Hungary and Slovenia respectively. The impact of the financial crisis tends to be much higher in these countries mainly because of their financial integration to the world market, whereas countries of Commonwealth of Independent States (CIS) are much less exposed to the international business cycle (EBRD, 2010). This can also confirm the fact that why average respondent from some CIS countries such as Russia, Azerbaijan and Armenia reports even higher confidence towards banks in 2010 compared to 2006.

While these simple descriptive analyses show a clear difference between pre-crisis and post-crisis trust levels among the transitional countries, a question raises what then drives the trust in banks? To answer this question, we next turn to multivariate regression analysis.

3.2.Econometrics Results

Pre-crisis determinants of trust in banks

In order to investigate the determinants of trust in banks, in Table 2 we employ OLS regression analysis before and after financial crisis periods separately. Looking first at the individual and household-level estimates of trust during normal times (Column 1), we find that older and female respondents have lower trust in banks. As expected, people with higher education appear to have higher confidence towards banks. Having a bank account, living in rural area, owning a private house and demonstrating higher social trust in people tend to have sizeable positive influence on respondent's trust in banks. For example, having a checking account by at least one member of household increases the trust in banks by about 0.24 units, while one unit increase in trust in people leads to 0.21 units increase in banking trust.

[Insert Table 2 about here]

In Column 2 of Table 2, we add country-specific variables and find all these controls statistically significant. Average growth of real GDP in past two years appears strongly and positively correlated with peoples' trust in banks, statistically significant at the 1 percent level. According to the model, Rule of law also tends to be a strong trust-building factor in transitional countries. We further found that foreign bank presence has small but statistically significant positive effect on trust in banks. Individual and household-level covariates remain statistically as well economically significant, except the positive coefficient for education which we fail to accept at 10 percent significance level.

Post-crisis determinants of trust in banks

Column 3 and Column 4 of Table 2 displays the OLS estimates for trust after the financial crisis. Column 3 shows that Individual and household-level covariates enter significantly except homeowners, which become statistically insignificant. The reported estimates suggest that younger, rural, banked and educated people have higher trust in banks after the crisis. Having general trust in other people remains strongly correlated with respondents' confidence towards banks. Nevertheless, after the crisis, being female starts to increase the trust in banks compared to opposite that was observed during the normal times. One can speculate about possible reasons behind this result but no explanation strikes us as particularly plausible.

When we include country-specific variables in Column 4, the individual and household level covariates that we found to be significant in predicting peoples' trust in bank continue to enter significantly. After controlling for individual and household-level covariates, economic growth and Rule of law also remain statistically significant with positive effect in trust. However, foreign ownership of banks starts to play detrimental role in peoples' confidence. This can be explained by risen skepticism stemming from external finance that largely fueled a credit boom first and created the financial crisis later (Berglof et al., 2009).

It can be observed that the magnitudes of coefficients for trust are different in pre-crisis and post-crisis periods. To check the robustness of these differences we use interaction approach as shown in Columns 5 of Table 2. By multiplying them with time dummy we aim to detect systematic changes in variables before and after the crisis. Only two out of the ten interacted coefficients (interaction with education and Rule of Law) come out statistically non-significant. According to the results of Column 5, older and female people have increased their level of trust in banks vis-à-vis the average person during the crisis period. In contrast, people living in rural area, having bank accounts, owning a house and showing higher trust in others have decreased their confidence towards banks. Furthermore, country-level variables such as economic growth and foreign bank entry show lower trust levels after crisis.

Effect of crisis on trust in banks

In order to understand the costs of financial crisis that associated with the drop in trust, we start to investigate how personal consequences of crisis affect their trust in banking system. Here we use subjective views of individuals who have lived through crisis and experienced crisis in different ways. For this purpose, we add perceptional data on crisis to our benchmark model and run the regression equation (2). The results of the estimations are shown in Column 1 of Table 3.

[Insert Table 3 about here]

According to Column 1, the effect of personal experience with crisis on trust is both statistically significant and quantitatively large. For example, trust in bank is 0.20 unit points lower for people who consider the crisis to be a major threat to their life. Respondents reporting that they have been affected by crisis through wage lost, drop in remittances and decline in working hours tend to have lower trust in bank by 0.14, 0.06 and 0.05 units respectively. Nevertheless, trust in banks appears to be indifferent to people who were affected by crisis through their job loss. Interestingly, however, people who ended up closing the business because of the crisis are found to be positively associated with their trust in banks. The reason for this is that a very few people (3 percent) report that their family business is closed due to the crisis which reduces the observations significantly.

For an accurate interpretation of the crisis effect on the trust it is also important to look closer at the time-specific crisis dummy that we add to our benchmark model (equation 1) and remove the GDP growth variable as the crisis-related indictor. Our crisis-dummy measures the unexplained change in trust of people after the crisis period. According to the results of Column 2, crisis dummy is negative and statistically significant which means that unexplained average decline in trust after the crisis is 0.22 units.

Model specified in Column 3 of Table 3 allows us to stress that unexplained drop in trust can be largely attributed to a deterioration of the general economic situation since crisis dummy becomes statistically non-significant just after controlling for GDP growth rate. In the next section, we conduct a Blinder-Oaxaca decomposition to ensure that our finding is robust.

3.3.Decomposition Results

We employ a detailed Blinder-Oaxaca decomposition to help find the contribution of each variable to the predicted trust level. Table 4 reports a summary of decomposition of the predicted trust level difference in banks (0.146) before and after the crisis period. As is apparent from the table, changes in the characteristics can explain a larger part (116%) of the changes in the level of trust in banks, while unexplained component explain a very

small part (16%) of the changes which also appears to be statistically insignificant. This means that in the post crisis period, the level of trust in banks would be very much similar or equal to pre-crisis period if there is no difference in characteristics (endowments) between two periods.

[Insert Table 4 about here]

A closer look at the results of Table 4 reveals that the explained effect is almost exclusively driven by deterioration in the growth rate of GDP. The breakdown of the characteristics effects shows that drop in trust might recover as soon as a country starts to perform higher or pre-crisis GDP growth rate. More specifically, if the GDP growth after the crisis was same as pre-crisis period then the predicted gap in the level of trust would disappear.

4. CONCLUSION

Our findings indicate that younger, rural, university educated, banked and generally trusting people appear to have higher confidence towards banks both in pre-crisis as well as post-crisis periods. Among country-level covariates, growth rate of GDP and Rule of Law remain positively and significantly associated with banking trust in both period, while presence of foreign owned banks starts to be detrimental to the trust after the crisis. In addition to 'objective' variables, we find that personal experience with crisis plays also an essential role in the context of explaining the degree of trust in banks.

We also find that financial crisis has temporary and small impact on peoples' trust in banks across the households in transitional countries. In the post crisis period, the level of trust in banks would be very much similar or equal to pre-crisis period if there is no difference in characteristics (endowments) between two periods. We also show that the decline in banking trust is largely a consequence of the macro economic downturn. Growth of national income has a strong impact on trust and in fact, it explains the major part of the crisis effect on trust, which poses a dilemma to commercial banks, as they cannot directly control macro economic growth. Nevertheless, high-dependence on general economic performance makes it possible for trust to return to its pre-crisis level quickly, otherwise would be very difficult and might lead to deeper stagnation in entire banking system.

Finally, one main limitation of our study should be mentioned. In addition to soci-economic characteristics of respondents and some socio-economic conditions at the country-level, trust in banks may also depend on the performance of financial institutions (Knell and Stix, 2009). It may increase or decrease with good or bad performance of banks. Due to the data shortage, we are not able to investigate whether drop in

performance and investments of financial institutions can have paralyzing effects on trust in those institutions.

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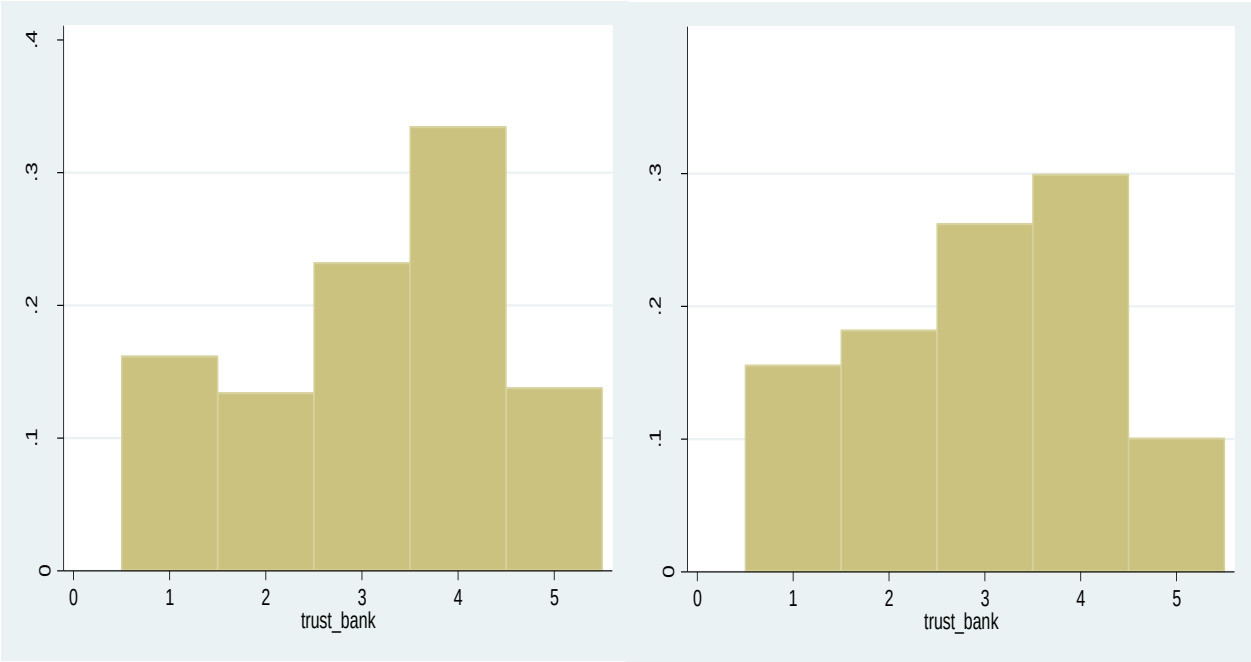
Figure 1

Test for normality of trust in banks



Pr (Skewness)	0.0000	0.0000
Pr (Kurtosis)	0.0000	0.0000
chi2(2)	5711.5	6152.3
Prob(chi2)	0.0000	0.0000

Table 1
Descriptive Statistics

Panel A. Descriptive Statistics – Whole Sample

	Year	Complete distrust		Some distrust		Neither trust nor distrust		Some trust		Complete trust	
		N	%	N	%	N	%	N	%	N	%
Total	2006	4,309	16.18	3,574	13.42	6,173	23.18	8,909	33.46	3,664	13.76
	2010	4,589	15.55	5,374	18.21	7,739	26.22	8,839	29.95	2,971	10.07

Panel B. Descriptive Statistics - Country average

Albania	2006	134	14.1	75	7.9	207	21.8	353	37.2	180	19.0
	2010	67	6.9	145	15.0	277	28.6	354	36.6	125	12.9
Armenia	2006	251	26.8	101	10.8	172	18.3	293	31.2	121	12.9
	2010	152	20.4	92	12.3	140	18.8	231	31.0	131	17.6
Azerbaijan	2006	99	12.1	113	13.9	186	22.8	218	26.7	199	24.4
	2010	128	13.4	124	13.0	170	17.8	420	44.0	112	11.7
Belarus	2006	94	10.5	109	12.2	218	24.3	297	33.1	178	19.9
	2010	57	6.7	146	17.2	219	25.8	271	32.0	155	18.3
Bosnia	2006	247	25.6	152	15.7	201	20.8	253	26.2	113	11.7
	2010	182	17.1	229	21.5	391	36.7	217	20.4	46	4.3
Bulgaria	2006	241	27.0	140	15.7	221	24.7	245	27.4	46	5.2
	2010	165	19.2	212	24.6	249	28.9	206	23.9	29	3.4
Croatia	2006	148	15.5	166	17.3	306	32.0	275	28.7	62	6.5
	2010	215	22.2	170	17.6	351	36.3	216	22.3	16	1.7
Czech Republic	2006	54	5.6	148	15.4	265	27.5	429	44.6	66	6.9
	2010	61	6.1	165	16.5	326	32.7	403	40.4	42	4.2
Estonia	2006	34	3.6	86	9.2	139	14.9	461	49.3	216	23.1
	2010	32	3.4	105	11.1	170	17.9	471	49.7	170	17.9
Macedonia	2006	363	38.8	104	11.1	223	23.8	179	19.1	67	7.2
	2010	174	16.8	149	14.4	329	31.8	249	24.1	132	12.8
Georgia	2006	97	11.3	117	13.7	192	22.5	338	39.5	111	13.0
	2010	32	4.0	107	13.3	202	25.0	430	53.3	36	4.5
Hungary	2006	119	12.7	164	17.4	286	30.4	296	31.5	75	8.0
	2010	336	33.4	252	25.1	267	26.6	113	11.2	37	3.7
Kazakhstan	2006	93	10.3	151	16.8	234	26.0	289	32.1	134	14.9
	2010	98	11.0	190	21.3	270	30.2	251	28.1	85	9.5
Kyrgyzstan	2006	134	14.7	88	9.6	110	12.0	400	43.8	181	19.8
	2010	133	14.6	150	16.4	138	15.1	260	28.5	232	25.4
Latvia	2006	52	5.5	118	12.5	239	25.4	444	47.1	89	9.4
	2010	160	17.6	205	22.6	223	24.6	281	31.0	38	4.2
Lithuania	2006	79	8.3	133	13.9	227	23.8	415	43.5	100	10.5
	2010	96	10.3	188	20.1	312	33.4	302	32.3	37	4.0
Moldova	2006	210	24.8	151	17.8	220	26.0	227	26.8	38	4.5
	2010	187	22.7	201	24.5	147	17.9	248	30.2	39	4.7
Mongolia	2006	89	10.1	71	8.1	161	18.4	323	36.8	233	26.6
	2010	47	5.2	96	10.7	189	21.1	423	47.2	141	15.7
Montenegro	2006	118	12.8	124	13.4	248	26.8	298	32.2	137	14.8
	2010	81	8.4	123	12.8	309	32.1	381	39.6	68	7.1
Poland	2006	110	11.9	147	15.9	260	28.2	337	36.6	68	7.4
	2010	98	6.3	319	20.6	488	31.4	579	37.3	68	4.4
Romania	2006	155	16.3	119	12.5	282	29.6	297	31.2	99	10.4
	2010	444	44.3	237	23.6	171	17.0	134	13.4	17	1.7
Russia	2006	234	25.9	195	21.5	210	23.2	208	23.0	58	6.4
	2010	319	22.6	265	18.8	349	24.7	349	24.7	129	9.1
Serbia	2006	319	33.7	139	14.7	204	21.5	228	24.1	57	6.0

	2010	370	24.9	294	19.8	473	31.9	299	20.1	49	3.3
Slovakia	2006	116	12.3	142	15.0	213	22.5	380	40.2	94	9.9
	2010	48	4.9	150	15.2	354	35.9	370	37.5	64	6.5
Slovenia	2006	42	4.4	93	9.7	282	29.3	423	44.0	121	12.6
	2010	112	11.5	220	22.7	309	31.8	277	28.5	53	5.5
Tajikistan	2006	42	4.8	62	7.1	139	15.9	264	30.2	368	42.1
	2010	33	3.8	115	13.2	188	21.5	268	30.7	269	30.8
Turkey	2006	273	31.5	114	13.1	169	19.5	126	14.5	186	21.4
	2010	202	21.1	161	16.8	240	25.1	252	26.4	101	10.6
Ukraine	2006	264	28.4	169	18.2	170	18.3	283	30.4	44	4.7
	2010	439	29.5	396	26.6	320	21.5	265	17.8	66	4.4
Uzbekistan	2006	98	10.6	83	9.0	189	20.5	330	35.8	223	24.2
	2010	121	9.6	168	13.3	168	13.3	319	25.3	484	38.4

Table 2

Determinants of trust in 2006 and 2010

	1		2		3		4		5	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Socio-economic characteristics										
Constant	2.7158***	0.0328	2.5853***	0.0345	2.3222***	0.0477	2.6019***	0.0384	2.3222***	0.0468
Age	-0.0074***	0.0004	-0.0063***	0.0004	-0.0077***	0.0005	-0.0042***	0.0004	-0.0077***	0.0005
Female	-0.0464***	0.0156	0.0677***	0.0147	-0.0312**	0.0160	0.0814***	0.0150	-0.0312**	0.0157
University degree	0.0446***	0.0200	0.0572***	0.0181	0.0278	0.0205	0.0650***	0.0184	0.0278	0.0201
Bank account	0.2388***	0.0161	0.0837***	0.0146	0.2562***	0.0197	0.1838***	0.0180	0.2562***	0.0194
Rural	0.1673***	0.0161	0.0989***	0.0149	0.1851***	0.0165	0.0744***	0.0152	0.1851***	0.0162
House owner	0.0832***	0.0209	0.0119	0.0224	0.0835***	0.0218	-0.0271	0.0233	0.0835***	0.0214
Trust people	0.2122***	0.0063	0.1930***	0.0068	0.2097***	0.0064	0.1875***	0.0069	0.2097***	0.0063
Country-level variables										
GDP growth					0.0496***	0.0034	0.0353***	0.0019	0.0496***	0.0033
Rule of Law					0.0354**	0.0150	0.0293*	0.0158	0.0354**	0.0147
Bank foreign ownership					0.0010***	0.0003	-0.0019***	0.0003	0.0010***	0.0003
Interactions with dummy2010										
Dage									0.0035***	0.0006
Dfemale									0.1126***	0.0219
Duniversity degree									0.0372	0.0275
Dbank account									-0.0723***	0.0266
Drural									-0.1107***	0.0224
Dhouse owner									-0.1106***	0.0319
Dtrust people									-0.0222**	0.0094
Dgdp growth									-0.0143***	0.0038
Drule of law									-0.0061	0.0218
Dbank foreign ownership									-0.0030***	0.0004
R2	*0.0672*		*0.0394*		*0.0748*		*0.0595*		*0.0702*	
Obs	*25790*		*28107*		*24853*		*27116*		*51969*	

Notes: The symbols ***, **, * mean that the coefficient is statistically different from zero, respectively, at the 1-,5-,10-percent level.

Table 3
Effect of crisis on banking trust

	1		2		3	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Socio-economic characteristics						
Constant	3.2728***	0.0599	2.7776***	0.0267	2.4851***	0.0292
Age	-0.0051***	0.0006	-0.0062***	0.0003	-0.0059***	0.0003
Female	0.0919***	0.0180	0.0162	0.0110	0.0327***	0.0109
University	0.0267	0.0223	0.0421***	0.0137	0.0482***	0.0137
Bank account	0.1702***	0.0213	0.2076***	0.0133	0.2093***	0.0132
Rural	0.0440**	0.0184	0.1264***	0.0112	0.1204***	0.0111
House owner	-0.0630**	0.0271	0.0543***	0.0160	0.0337**	0.0159
Trust people	0.1791***	0.0084	0.2027***	0.0047	0.2011***	0.0047
Country-level variables						
GDP growth	0.0230***	0.0023			0.0379***	0.0016
Rule of Law	0.0274	0.0196	-0.0418***	0.0103	0.0359***	0.0107
Bank foreign ownership	-0.0008**	0.0003	-0.0015***	0.0002	-0.0006***	0.0002
Subjective variables						
Crisis effect	-0.2053***	0.0121				
Closed business	0.0878**	0.0423				
Lost job	0.0026	0.0205				
Lost wage	-0.1415***	0.0188				
Lost foreign income	-0.0561***	0.0218				
Lost working hours	-0.0511**	0.0222				
Dummy2010			-0.2162***	0.0112	0.0228	0.0148
R2	*0.0681*		*0.0562*		*0.0669*	
Obs	*18386*		*51969*		*51969*	

Notes: The symbols ***, **, * mean that the coefficient is statistically different from zero, respectively, at the 1-,5-,10-percent level.

Table 4

Blinder-Oaxaca decomposition of difference in trust in banks of 0.146 points between 2006 and 2010

	Coef.	Std. Err.	Share (%)
Aggregate effect (explained)	0.1674***	0.0107	115.8
Aggregate effect (unexplained)	-0.0228	0.0148	-15.8
Detailed Effects of Explained Component			
Age	-0.0049***	0.0008	-3.4
Female	-0.0153***	0.0028	-10.6
University degree	-0.0007***	0.0003	-0.5
Bank account	-0.0099***	0.0012	-6.8
Rural	0.001***	0.0004	0.7
House owner	0.0011	0.001	0.8
Trust people	-0.0569***	0.0028	-39.3
GDP growth	0.2343***	0.0126	162.1
Rule of Law	-0.0022*	0.0012	-1.5
Bank foreign ownership	0.0121***	0.0018	8.3

Notes: 1. The symbols ***, **, * mean that the coefficient is statistically different from zero, respectively, at the 1-,5-,10-percent level.

2. Share is ratio of the contribution of each factor or group of factors to the predicted overall differences in banking trust before and after the crisis.

APPENDIX

Table A.1
Country sample size of LIT-2006 and LIT-2010 surveys

	2006		2010	
	Number	Percent	Number	Percent
Albania	1000	3.45	1055	3.27
Armenia	1000	3.45	1000	3.1
Azerbaijan	1000	3.45	1002	3.11
Belarus	1000	3.45	1000	3.1
Bosnia	1000	3.45	1087	3.37
Bulgaria	1000	3.45	1014	3.14
Croatia	1000	3.45	1006	3.12
Czech Republic	1000	3.45	1007	3.12
Estonia	1000	3.45	1002	3.11
Macedonia	1000	3.45	1072	3.32
Georgia	1000	3.45	1000	3.1
Hungary	1000	3.45	1054	3.27
Kazakhstan	1000	3.45	1000	3.1
Kyrgyzstan	1000	3.45	1016	3.15
Latvia	1000	3.45	1007	3.12
Lithuania	1000	3.45	1013	3.14
Moldova	1000	3.45	1043	3.23
Mongolia	1000	3.45	1000	3.1
Montenegro	1000	3.45	1013	3.14
Poland	1000	3.45	1616	5.01
Romania	1000	3.45	1078	3.34
Russia	1000	3.45	1584	4.91
Serbia	1000	3.45	1519	4.71
Slovakia	1000	3.45	1011	3.13
Slovenia	1000	3.45	1000	3.1
Tajikistan	1000	3.45	1007	3.12
Turkey	1000	3.45	1004	3.11
Ukraine	1000	3.45	1559	4.83
Uzbekistan	1000	3.45	1500	4.65
Total	29000	100	32269	100

Table A.2
Descriptive statistics for independent variables

Variable	Year	Obs	Mean	Std. Dev.	Min	Max
Socio-economic characteristics						
Age	2006	29000	46.5155	17.7218	17.000	97.000
	2010	32269	45.4760	17.4179	17.000	99.000
Female	2006	29000	0.4150	0.4927	0.000	1.000
	2010	32269	0.6118	0.4873	0.000	1.000
University	2006	29000	0.1888	0.3913	0.000	1.000
	2010	32269	0.1979	0.3984	0.000	1.000
Bank account	2006	28980	0.3633	0.4810	0.000	1.000
	2010	32269	0.4122	0.4925	0.000	1.000
Rural	2006	29000	0.4268	0.4946	0.000	1.000
	2010	32269	0.4123	0.4923	0.000	1.000
House owner	2006	29000	0.8332	0.3728	0.000	1.000
	2010	32269	0.8781	0.3272	0.000	1.000
Trust people	2006	27970	2.6366	1.2331	1.000	5.000
	2010	30613	2.9288	1.0617	1.000	5.000
Country-level variables						
GDP growth	2004-2005	29000	6.9481	2.6773	3.7000	15.2000
	2008-2009	32269	0.3568	4.7659	-11.1000	10.1000
Rule of Law	2004-2005	29000	-0.2313	0.6924	-1.4448	0.9263
	2008-2009	32269	-0.1697	0.7140	-1.3153	1.1105
Bank foreign ownership	2005	28000	52.6862	33.5820	4.4000	99.4000
	2009	31262	59.2081	32.0485	4.4000	98.3000
Subjective variables						
Crisis effect	2006	NA	NA	NA	NA	NA
	2010	30232	2.4032	1.0887	1.0000	4.0000
Closed business	2006	NA	NA	NA	NA	NA
	2010	32269	0.0300	0.1707	0.0000	1.0000
Lost job	2006	NA	NA	NA	NA	NA
	2010	21691	0.2925	0.4549	0.0000	1.0000
Lost wage	2006	NA	NA	NA	NA	NA
	2010	21691	0.5235	0.4995	0.0000	1.0000
Lost foreign income	2006	NA	NA	NA	NA	NA
	2010	21691	0.2230	0.4163	0.0000	1.0000
Lost work hours	2006	NA	NA	NA	NA	NA
	2010	21691	0.1974	0.3980	0.0000	1.0000