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ABSTRACT

Use of Banking Services in Emerging Markets—Household-Level Evidence*

This paper uses survey data for 60,000 households from 29 transition economies in 2006 and 2010 to explore how the use of banking services is related to household characteristics, as well as to bank ownership, deposit insurance and creditor protection. At the household level we find that the holding of a bank account, a bank card, or a mortgage increases with income and education in most countries and find evidence for an urban-rural gap. The use of banking services is also related to the religion and social integration of a household as well as the gender of the household head. Using the within-country variation between 2006 and 2010, we find that the privatization of state-owned banks and an increase in market share of foreign banks are associated with a stronger use of banking services. Foreign bank ownership is also associated with a higher use of bank services among highincome households and households with formal employment. State ownership, by contrast is hardly associated with more outreach to poorer households. More generous deposit insurance and stronger creditor rights also foster the use of banking services among the urban, rich, better educated and formally employed.

JEL Classification: G18, G2, O16 and P34
Keywords: access to finance, bank ownership, creditor protection, deposit insurance and household finance

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1. Introduction

Access to banking services is viewed as a key determinant of economic well-being for households, especially in low-income countries. Savings and credit products make it easier for households to align income and expenditure patterns across time, to insure themselves against income and expenditure shocks, as well as to undertake investments in human or physical capital. Given the importance attributed to financial service access it is striking that there is little cross-country evidence which documents how the use of financial services differs across households and, in particular, how cross-country variation in the structure of the financial sector affects the type of households which are banked.

This paper uses household survey data from 28 transition economies and Turkey taken from the EBRD's Life in Transition Survey (LITS) database to (i) document the use of formal banking services (bank accounts, bank cards and mortgages) across these 29 countries in 2006 and 2010, (ii) relate this use to an array of household characteristics, (iii) gauge the relationship between changes in bank ownership and the financial infrastructure (deposit insurance and creditor protection) and changes in the use of banking services over time within a country, and (iv) assess how cross-country variation in bank ownership, deposit insurance and creditor protection affect the composition of the banked population.

The relationship between the ownership structure of the banking system and access to financial services has been intensively discussed, both in the theoretical and empirical literature. On the one hand, government-owned banks often have the mandate to increase access to financial services by firms and households. On the other hand, foreign-owned banks are conjectured to have too centralized organizational structures and to be too risk-averse to reach out towards the low-end of the market. While the recent literature has explored the relationship between the ownership structure of banking markets and access to credit by

enterprises, little evidence exists on the relationship between ownership structure in the banking system and the use of formal banking services by households.

Upgrades in the financial infrastructure have often been advocated as instruments to not only deepen but also broaden financial systems. Deposit insurance has been mentioned as a tool to create trust in the financial system, especially for "small" savers. Creditor protection through credit information sharing and creditor rights might also reduce costs and risks for banks to extend credit to larger segments of the population.

Transition economies are an almost ideal sample to study the relationship between bank ownership, the financial infrastructure and household use of banking services. After the fall of communism, these countries had to transform their state-owned, mono-banking systems into two-tier market-based financial systems.[1] Countries, however, chose different financial sector reform paths.[2] Some countries opted for domestic privately-owned banking systems through privatization or the entry of new domestic players. Others opted for foreign bank entry early on, be it through privatization or by encouraging greenfield entry (Claeys and Hainz, 2007). Countries also moved at different speeds in terms of institutional solutions to protect depositors, e.g. deposit insurance (Demirguc-Kunt et al., 2005) and legislation or institutions introduced to protect creditors (Pistor et al., 2000; Brown et al., 2009).

Our empirical analysis shows a large variation in the use of banking services across the transition economies. Specifically, we find that in 2010 more than 80 percent of households in the Czech Republic, Estonia, Slovakia and Slovenia had a bank account, as opposed to less than 5 percent of households in Azerbaijan, Georgia, Kyrgyzstan, Tajikistan and Uzbekistan. This compares to over 90 percent in France, Germany, Italy, Sweden and the U.K. Within countries we find that the use of banking services is more common among

[1] The state-bank systems before the transition had quite extensive networks with large shares of the population having savings accounts. However, besides the notable exceptions of the Czechoslovakia, Bulgaria and Hungary with high levels of financial intermediation there was little cross-country variation before the on-set of the transition process.
[2] See Bonin and Wachtel (2003) for a survey of financial sector reforms in the transition economies.

households located in urban areas, households with higher income, younger households, households headed by a male, as well as for households in which an adult member has university education and formal employment. By contrast, banking products are used less often by households which rely on transfer income and by Muslim households.

Using the within-country variation between 2006 and 2010, we find no consistent relationship between changes in deposit insurance or creditor protection and the share of households which use formal banking services. We do however find that the use of banking services increases in countries which privatized their banking sectors and where the presence of foreign banks increased.

Looking at the types of households which use banking services we find evidence for substantial compositional effects of foreign bank ownership, deposit insurance and creditor rights. The market share of foreign banks is positively associated with the use of banking products among high-income and formally employed households. Generous deposit insurance coverage increases the use of financial services among urban, rich and formally employed households. Creditor protection also seems to benefit households with formal employment and higher education. We do not find that state ownership is associated with more outreach to poorer households. We also find no robust evidence that credit information sharing is associated with cross-country variation in the composition of the banked population.

This paper contributes to the nascent literature on household use of formal banking services. On a cross-country level, Beck et al. (2007) find that government (foreign) ownership is negatively associated with outreach as measured by branch penetration (number of accounts per capita), while Beck et al. (2008) find that barriers for bank customers are higher where banking systems are predominantly government-owned and lower where there is more foreign bank participation. Recent household survey collection efforts in Southern and Eastern Africa using FinScope surveys have allowed rigorous analysis of household's use

of formal and informal services (see for example, Honohan and King, 2009; Beck et al., 2010; Atiero et al., 2011).[3] None of the previous literature, however, has used survey data for such a broad cross-section of countries as we do in this paper. Moreover, none of the existing studies has been able to study changes in access to finance over time within a country. This paper is thus the first to examine how changes in the structure of the banking sector over time affects access to finance at the household level. Moreover it is the first study to examine how variation in the structure of the banking sector across countries affects the composition of the banked population.

We also contribute to the extensive literature on the relationship between bank ownership and the use of banking services. This literature makes ambiguous predictions, both for the effect of foreign bank and state bank ownership. Gerschenkron (1962) claims that state-owned banks can overcome market failures and help channeling funds to strategically important projects that are neglected by private financial institutions.[4] However, a large theoretical and empirical literature suggests mission drift by these banks (La Porta et al., 2002), especially where political interference in the financial system is rampant (Cole, 2009; Sapienza, 2004; and Khwaja and Mian, 2005). Similarly ambiguous predictions have been made about the effect of foreign bank ownership. Studies of foreign bank entry in developing countries have indicated that local profit motives are an important driving force for entry.[5] This would suggest that foreign banks are interested in offering services to a broader clientele (see, for example, Focarelli and Pozzolo, 2001; Buch and DeLong, 2004; and Buch and Lipponer, 2004). However, the most recent theoretical and empirical studies suggest that

[3] There have been a series of country-level studies on Brazil, Mexico, and Romania, among others, over the past ten years. Most of these, however, use a sample that is geographically limited, even within the respective country. For a broader overview and discussion, see World Bank (2007).

[4] Government-owned savings banks in Western Europe were often founded with the explicit goal of expanding access to formal banking services to low-income individuals and postal savings banks often achieve a large clientele (Baums, 1994; World Bank, 2006).

[5] Earlier U.S. based studies on foreign bank entry in the 1980s suggest that foreign banks are not interested in offering services to the population at large but that they primarily "follow their clients" (see Goldberg and Saunders, 1981a,b; Cho et al., 1987; Hultman and McGee, 1989; and Goldberg and Grosse, 1994, among others).

foreign banks tend to "cherry pick" (see, for example, Detragiache et al. 2008; Gormley, 2010; and Mian, 2006), which would imply that foreign bank penetration would be negatively related to the broader use of financial services. Using firm-level data from Eastern and Central Europe Giannetti and Ongena (2009) find that firms of all sizes benefit from foreign bank presence. De Haas and Naaborg (2006) find that while foreign banks in Eastern and Central Europe initially focused on large corporates, they have increasingly gone down-market in recent years. Supporting this view, recent bank-level evidence by Brown and De Haas (2011) suggests that foreign bank takeovers in Emerging Europe did lead to increased lending to the household sector. By contrast, Beck and Martinez Peria (2010) find a negative impact of foreign bank entry in Mexico on branch penetration and the number of deposit and loan accounts. We add to this literature by providing household-level evidence on the effect of bank ownership structure.

Our paper is the first to our knowledge which examines how the quality of the financial infrastructure, i.e. deposit insurance and creditor protection, affects the use of banking services at the household-level. Evidence based on aggregate cross-country data suggests that generous deposit insurance does not foster financial intermediation but increases the fragility of the financial sector (Cull et al., 2005). Cross-country variation in information sharing and creditor rights have been related to aggregate credit levels (Djankov et al. 2007) as well as to firms' access to credit (Beck et al., 2004; Love and Mylenko, 2003). With respect to transition countries, Brown et al. (2009) show that countries that established credit registries at an earlier stage have already seen a positive impact on firm financing, by increasing availability and lowering cost, especially to more opaque firms. Haselman and Wachtel (2007) show that banks in better functioning legal environments are more willing to lend to SMEs and to provide mortgages.

The remainder of this paper is organized as follows. The next section introduces the data and section 3 discusses the methodology. Section 4 presents the empirical results and section 5 concludes.

2. Data

Our household-level data are taken from the EBRD-World Bank *Life in Transition Survey* (LITS) implemented in 2006 and 2010, as a repeated cross-sectional survey. The two survey waves cover 29 countries in which the EBRD operates comprising 28 transition countries and Turkey.[6] In each country, roughly 1,000 interviews were conducted with randomly selected households for each wave of the survey. After excluding households with missing information we are left with a total sample of 59,697 observations: 28,153 observations for the 2006 survey, and 31,544 for the 2010 survey. The LITS dataset also includes sampling weights to account for the differences in the ratio of sample size to population size across countries, as well as for sampling biases within countries. We use these weights when calculating summary statistics, as well as throughout our univariate and multivariate analyses.[7] The first part of the LITS questionnaire is conducted with the household head and elicits information on household composition, housing, expenses and use of services. The second part of the questionnaire is administered to one adult member of the household and yields information on that person's attitudes and values, current economic activity, life history, as well as personal information.[8] We use information from the first part of the survey to yield indicators of household use of banking services, location, income, economic activity as well as household size, and the gender and age of the household head. From the second part of the survey we yield indicators of education, employment status, social integration, and

[6] The survey does not cover Turkmenistan.
[7] Details of the LITS methodology are available at http://www.ebrd.com/country/sector/econo/surveys/lits.htm.
[8] The second part of the questionnaire was conducted with the adult household member with the most recent birthday. This implies that for 40% of the households two people (the household head and another adult member) were interviewed, while for 60% of the households one person was interviewed (the household head).

religion. Table 1 provides definitions and the sources for all variables which we employ from the LITS 2006 and 2010.

Table 1 here

We employ three indicators of household use of banking services. The dummy variable *Account* measures whether any member of the household has a bank account. The dummy variable *Card* measures whether any member of the household has a bank (debit or credit) card. The dummy variable *Mortgage* indicates whether a household that owns its dwelling has financed this dwelling mainly with a mortgage. In 2006, 36 percent of surveyed households had a bank account and 31 percent had a bank card, while only 6 percent had a mortgage. By 2010, 42 percent had an account, 40 percent had a bank card and 10 percent had a mortgage, thus a clear increase in the use of banking services compared to four years earlier. The use of bank accounts and bank cards are highly correlated: In 2010, 69 percent of households with a bank account also had a debit or credit card. The use of bank accounts and mortgages are less correlated: In 2010, only 15 percent of households with a bank account also had a mortgage. These levels of use of banking services in our sample compare to significantly higher averages across five Western European countries, included in the 2010 LITS wave: 96 percent of the population hold a bank account across a sample of households in France, Germany, Italy, Sweden and the UK, 91 percent have a bank card and 59 percent of home owners have a mortgage.

Table 2 shows that there is substantial variation in the use of banking services across countries, with banked households much more common in the new EU member states than in the CIS countries. In 2010, more than 80 percent of households in the Czech Republic, Estonia, Slovakia and Slovenia had a bank account, while less than 5 percent of households

in Azerbaijan, Georgia, Kyrgyzstan, Tajikistan and Uzbekistan did so. Cross-country variation in the use of cards and mortgages is similar. Table 2 also indicates that in many countries, the use of financial services increased between 2006 and 2010, while in others it decreased. Specifically, Albania, Armenia, Lithuania, Macedonia, Mongolia, Montenegro, Serbia, and Turkey saw a significant increase in the use of financial services once we control for the above mentioned household characteristics, while Croatia, Estonia, Hungary, Moldova, Romania, Russia, Slovenia, Ukraine and Uzbekistan saw a decrease. The increase in the use of bank cards, on the other hand, has been more general. Only Bosnia, Croatia, Lithuania, and Poland saw a statistically and economically significant drop in the use of cards between 2006 and 2010. Turning to the use of mortgages, about half of the countries saw an increase between 2006 and 2010, while the other half saw no significant change.

Table 2 also compares our indicators of banking service use to existing aggregate measures of financial depth and access from the EBRD transition report (Credit / GDP) and Honohan's (2008) *Composite* estimate of the share of population that uses formal banking services. There is a strong positive correlation between our survey-based indicators of use of banking services and the *Composite* indicator and *Credit / GDP*.[9]

Table 2 here

We relate the use of banking services to an array of individual and household characteristics; descriptive statistics are presented in Table 3 Panel A. At the household-level we expect the use of banking services to be related to household location, income and income sources. The dummy variable *Urban* captures whether the household is located in an urban

[9] Spearman rank correlations based on 2010 (weighted) country averages of *Account*, *Card* and *Mortgage* the *Composite* indicator and the 2007-2009 average of *Credit / GDP* yield the following results: *Account* is significantly correlated with *Composite* (.83, p<.05) and *Credit / GDP* (.72, p<.05). *Card* is significantly correlated with *Composite* (.80, p<.05) and *Credit / GDP* (.70, p<.05). *Mortgage* is significantly correlated with *Composite* (.56, p<.05) and *Credit / GDP* (.51, p<.05).

rather than a rural area. The variable *Expenses* is our proxy of household income and measures annual household expenses in USD.[10] In addition to our measure of income level we use three dummy variables to capture the main source of household income; *Self-employed* and *Transfer receiver,* with *Wage income* as the reference category.[11]

We include several demographic characteristics, including household *Size*, which is the number of adults and children in the household, the *Age* of the household head and the gender of the household head, captured by the dummy variable *Male*.

We expect household use of banking services to be related to the respondent's level of education, employment status, social integration and religion. The dummy variable *University degree* captures whether the respondent to the survey has a tertiary-level degree, while the variable *Formal employed* captures the respondent's most recent employment history, i.e. whether the respondent had a formal employment contract during the past 12 months. *Language* indicates whether (s)he speaks at least one official language and is thus an indicator of social integration. The variable *Muslim* is a dummy variable indicating followers of Islam.

Table 3 here

We employ eight country-level explanatory variables to examine the effect of bank ownership and financial infrastructure on household use of banks, while controlling for the potential impact of macroeconomic conditions. Summary statistics of our country-level explanatory variables are presented in Table 3 Panel B. We average the country-level variables over the period 2003-2005 for the 2006 wave of LITS and 2007-2009 for the 2010 wave of LITS.

[10] Household expenses are measured according to the OECD household equivalized scale.
[11] Transfer income covers both state and private (charity) transfers. Using separate dummy variables for these two transfer categories yields qualitatively similar findings.

We use two indicators of bank-ownership. *Foreign banks* and *State banks* measure the share of banking assets controlled by foreign-owned and state-owned banks respectively and are taken from the EBRD transition report. The (unweighted) share of foreign bank assets in our sample of countries increased from 50.3 to 62.2 percent during our observation period, while the share of state bank assets fell from 15.8 to 11.4 percent. There is considerable variation in the market share of foreign banks and state banks across countries: In the period 2007-2009, foreign banks had only 15 percent of total banking assets in Turkey, while their market share was 98 percent in Estonia. Also in 2007-2009 there were no state-owned banks in Albania Armenia, Estonia, Georgia, Lithuania, and Macedonia, while their market share was 40 percent or above in Azerbaijan, Kazakhstan and Russia.

We employ three indicators of the financial infrastructure. First, we consider *Deposit insurance coverage* as indicator of the financial safety net for depositors.[12] This variable indicates the deposit insurance coverage relative to GDP per capita and is taken from Demirguc-Kunt et al. (2005) for 2003. We updated this information for the year 2007 using information from the International Association of Deposit Insurers (www.iadi.org). On average across our sample deposit insurance coverage did not increase over our observation period. However, at the country level we observe substantial changes in both directions. In Armenia, Azerbaijan and Tajikistan for example deposit insurance was newly introduced, offering coverage of 2.3 and 1.3 times GDP per capita respectively in Armenia and Azerbaijan, and unlimited coverage in Tajikistan. By contrast, due to increases in average income levels deposit insurance coverage in Poland fell from five times to three times GDP per capita, while in Slovakia it fell from four times to less than two times GDP per capita.

We use two indicators of creditor protection which are taken from the World Bank *Doing Business* database. The variable *Credit information* is scaled between zero and sic and

[12] In unreported robustness tests, we also try a dummy variable for explicit deposit insurance, with qualitatively similar results.

captures the extent to which borrower information is collected and shared among financial institutions.[13] For the period 2003-2005, this indicator ranges from zero in eight countries without credit registry to five in Bosnia, Estonia, Hungary and Turkey. By the period 2007-2009 the presence and quality of credit information improved substantially throughout the region. Information sharing institutions were introduced in Albania, Croatia, Georgia, Kazakhstan, Russia, Ukraine and Uzbekistan while their operations were intensified in a further 12 countries. We also use an indicator of the legal framework to protect creditors. *Creditor rights* is an index of the legal rights of secured creditors in- and outside insolvency of a company and ranges from zero to ten. For the period 2003-2005 this index ranges from two in Uzbekistan to nine in Albania, Latvia, and Slovakia. By the period 2007-2009 there was a general improvement in creditor rights across the sample, however at a lower scale than for credit information sharing.

At the country-level we control for *GDP per capita*, consumer price *Inflation* and the share of non-performing loans to total outstanding loans (*NPL*) in the banking sector of each country. The variable *NPL* captures the extent to which debt overhang in the banking sector, especially in the wake of the recent financial crisis may limit the supply of financial services. Interestingly, the mean level of non-performing loans across all countries did not increase over our observation period (6.9 percent in 2003-2005 versus 6.8 percent in 2007-2009). However, this masks significant changes in non-performing loans in both directions in individual countries. For example in the Ukraine the level of *NPL* increased from two percent in 2003-2005 to 17 percent in 2007-2009. By contrast, in Poland the level of *NPL* decreased from 18 percent in 2003-2005 to 6 percent in 2007-2009.

Domestic *Inflation* should affect the household choice to save in local currency, foreign currency or other assets. Moreover if households save in local currency, domestic

[13] In unreported robustness tests, we also try the share of adult population covered by a public or private credit registry, with qualitatively similar results.

inflation should affect whether they save in cash or deposit their money with a bank (Mulligan and Sala-i-Martin, 2000). In our sample of countries CPI inflation varies strongly. In 2003-2005 average inflation across all countries was 6.6 percent, ranging from 2 percent in the Czech Republic to 16 percent in Belarus. During our observation period average inflation increased, reaching an average of 7.8 percent in 2007-2009.

We include *GDP per capita* as a measure of aggregate income, as existing evidence shows that countries with higher income levels display a broader access to banking services (see e.g. Beck et al. 2007). Aggregate income levels differ strongly across our sample. In 2003-2005 for example average (unweighted) GDP per capita was 4,425$ in our sample, but ranged from 313$ in Tajikistan to 16,395$ in Slovenia. Income levels increased by 80 percent (in $ terms) in our sample of countries between 2003-2005 and 2007-2009.

Table 4 Panel A shows significant correlations between the indicators of banking services and our indicators of ownership structure, financial infrastructure and macroeconomic environment. Here, we present Spearman rank correlations between the different indicators, with the use of bank services aggregated on the country-level for 2010. We find that the use of bank services is higher in countries with a higher share of foreign-owned banks, more generous deposit insurance and higher GDP per capita, while it is lower in countries with higher inflation.. The use of mortgages is negatively associated with the level of non-performing loans. There are also significant rank correlations between some of the country-level factors that we will relate to the use of banking services. There is a negative and significant correlation between foreign and state ownership, which can be explained by the privatization of state-owned banks to foreign owners in many transition economies. Inflation is higher in countries with lower foreign bank ownership, higher state-ownership and lower deposit insurance coverage.

The Table 4 Panel B rank correlations show that the use of banking services, the ownership structure, financial infrastructure and macroeconomic environment are also rank correlated over time within countries. Here, we present rank correlations of the differences in the country-level variables between 2006 and 2010. We find that increases in the use of accounts are significantly correlated with increases in the use of cards and mortgages, while changes in the use of cards and mortgages are not significantly correlated with each other. We also find that the privatization of state-owned banks is significantly rank correlated with increases in the use of banking services. Few of the other rank correlations are significant.

Table 4 here

3. Methodology

In the first step of our empirical analysis we relate our indicators of banking service use $B_{h,c}$ of household h in country c to characteristics of the household X_h controlling for country level determinants with country-fixed effects α_c:

$$B_{h,c} = \alpha_c + \beta_1 X_h + \varepsilon_{h,c} \tag{1}$$

We run regression (1) separately for the 2006 and the 2010 data as well as on a pooled sample, including a dummy variable *LITS 2010* for observations from the 2010 wave of the survey. We run regression (1) as a probit regression, with error terms clustered at the country-level to control for possible correlation between error terms across households within countries.

We expect that urban households, households with higher income, households with formal employment and households with higher education levels are more likely to use banking services. By contrast we expect that households which rely on self-employment and transfer income are less likely to use banking services than households with wage income.

We expect households with male heads to be more likely to use formal banking services. Households which do not speak an official language are hypothesized to be less likely to have a bank account. Finally, we expect that Muslim households are less likely to use banking services. Grosjean (2011) shows that regions in South-East Europe which were under the influence of the Ottoman Empire, and thus the religious based prohibition of interest-lending persisted longer, show a significant lower level of financial development.

In the second step of our empirical analysis, we exploit the time dimension of our data (i.e. repeated cross-section) and relate changes in the use of banking services to an array of country-level variables:

$$B_{h,c,t} = \alpha_c + \beta_1 X_{h,t} + \beta_2 Z_{c,t} + \varepsilon_{h,c,t} \qquad (2)$$

where $Z_{c,t}$ is a vector of time-varying country-level indicators. Controlling for country-fixed effects and household characteristics (and thus for changes in sample composition between 2006 and 2010), we gauge the relationship between changes in country-level factors and changes in the likelihood of using banking services. As in regression (1), we run this regression as probit model and allow for clustering on the country level.

As discussed above, the literature has made different predictions about the relationship between ownership structure of the banking system and the use of banking services. On the one hand, foreign-owned banks have superior technologies and organizational structures enabling them to reach out to a larger share of the population. On the other hand, they might cherry-pick and focus on the most profitable segments of the population, ultimately reducing access to financial services. While state-owned banks often have the explicit mandate to foster broad access to finance, inefficiencies and mission drift might prevent them from doing so. More generous deposit insurance can increase trust in the banking system, but can also undermine this trust if the consequent moral hazard risk results in more aggressive risk taking by banks and ultimately higher bank fragility (Cull et al.,

2005). More effective systems of credit information sharing and stronger creditor rights are expected to increase the use of bank cards and mortgages, as it reduces the costs of these products.

In the final step of our analysis we examine how the structure of bank-ownership in each country as well as the development of the financial infrastructure affect the use of banking services across different household types. Specifically, we focus on the interaction of our indicators of bank-ownership and financial infrastructure (Foreign banks, State banks, Deposit insurance, Credit information, Creditor rights) with selected household-level explanatory variables (*Urban, Expenses, University degree, Formal employed*). We focus on these specific household characteristics as theory makes specific predictions about the relationship between ownership and infrastructure, on the one hand, and use by population groups with these characteristics, on the other hand. We control for level effects across countries as well as time effects with country-year fixed effects.

$$B_{h,c,t} = \alpha_{c,t} + \beta_1 X_{h,t} + \beta_2 Z_{c,t} * X_{h,t} + \varepsilon_{h,c,t} \tag{3}$$

As before, we allow for clustering of error terms on the country-level, but estimate regression (3) with a linear probability model due to the difficulty of interpreting the marginal effects of interaction terms in non-linear models (Ai and Norton, 2003).[14] By including country-year dummies, we focus on the relationship between the country-level factors and the composition of the banked population, controlling for changes in these relationships over time. We also control for the interaction of these household characteristics with *GDP per capita* so as not to mix up compositional effects of aggregate income levels with those of our financial sector variables.

Based on the hypothesis that foreign banks cherry pick clients in host countries, we expect that foreign bank ownership may encourage the use of banking services particularly

[14] In unreported regressions, we confirm our findings qualitatively using probit regressions.

among urban, wealthy, formally employed, and better educated households. By contrast, if state-owned banks contribute to a broader access of financial services we expect that rural households and lower-income households benefit particularly from state-bank presence.

Our predictions concerning the relationship between our indicators of financial infrastructure and the use of bank services are ambiguous. Lower income households might be more likely to open bank accounts in countries with a higher deposit insurance coverage. Alternatively, it might be richer, wealthier and better educated segments of the population who are informed about deposit insurance and are hence attracted to banks in countries with higher deposit insurance coverage. We predict that in countries with better credit information sharing and creditor rights the costs and risk for banks to reach out to more marginal segments of the population might be reduced. On the demand side, however, improved creditor protection could encourage the use of credit by households with formal employment and higher income which may be more likely to use external finance to invest and smooth consumption.

4. Results

A. Household determinants of the use of bank services

Table 5 reports univariate results for household determinants of banking service use. We compare characteristics of those households with a bank account to those of households without an account, as well as those with and without a bank card and those with and without a mortgage. Panel A reports differences for the 2006 and Panel B for the 2010 wave of LITS. These sub-sample comparisons confirm our main predictions. Households with a bank account, a bank card or a mortgage are more often located in urban areas, have higher incomes, and more often have university education. Also as expected, households that use banking services are less often self-employed, rely less on transfer income, are more likely to

speak an official language, and are less likely to be Muslim. Finally, households that use banking services, are smaller, have a younger household head and are more likely to be headed by a male.

Table 5 here

Many of the differences between households which use banking services and those that do not are not only statistically, but also economically significant. For example, using data for 2006 in Panel A of Table 5, we find that households with a bank account have average household expenses of 3,429 USD per year compared to just 1,306 USD for households without a bank account. In 26 percent of the households with a bank account the responding adult has university education, while 50 percent of these households have formal employment. The corresponding shares for households without a bank account are just 17 percent for university education and 27 percent for formal employment. Further, while only 8 percent of the households with a bank account are Muslim, this is the case for 30 percent of the households without a bank account. Comparing Panel B to Panel A in Table 5 we find that the characteristics of those households which use banks as compared to those that do not has hardly changed over time.

While our univariate comparisons show a clear difference between the banked and the unbanked population, many of the household and individual characteristics are correlated with each other. What then drives the use of banking services – income, economic activity, education, geography, social integration, or religion? To answer this question, we turn to multivariate analysis. Table 6 displays marginal effects of probit estimates for the dependant variables *Account* (columns 1-3), *Card* (columns 4-6) and *Mortgage* (columns 7-9). The standard errors in each model account for clustering at the country-level and include country-

fixed effects. For each dependent variable, we first report a regression for the 2006 wave of LITS, then for the 2010 wave and finally for both samples together, including a dummy variable for 2010. The overall fit of our model is reasonably good, with Pseudo R^2 ranging from 0.13 to 0.45. While a large share of this can be attributed to country-fixed effects, regressions without the country-fixed effects also yield good fits. For example, omitting country fixed effects yields a Pseudo R^2 of 0.27 for the model presented in column (1) of Table 6.

Table 6 here

The Table 6 results confirm that the use of banking services is significantly related to household location, income, wealth, economic activity and religion. The reported estimates in columns (3), (6) and (9) suggest that urban households are four percent more likely to have a bank account, seven percent more likely to have a bank card and two percent more likely to have a mortgage than rural households. Raising household expenses by one standard deviation in 2006 increases the probability of having a bank account by roughly 16 percent, that of having a bank card by 13 percent and that of having a mortgage by 0.9 percent. Households that rely on transfer income are 10 percent (12 percent) less likely to have a bank account (card), while there is no significant relationship with mortgage use. After controlling for household location and income, self-employed households are not less likely to have a bank account or mortgage than households with wage income, but are eight percent less likely to have a card, suggesting that such products are more often offered to households with wage income.

Controlling for other household characteristics, larger households are more likely to use banking services, which is contrary to our univariate comparisons in Table 5. Households

with an older head are less likely to have a bank account (but only in 2010), a card or a mortgage. Finally, households with a male head are three (six) percent more likely to have a bank account (mortgage), but not more likely to have a bank card.[15]

Controlling for household income and economic activity, households with a university graduate are 13 percent more likely to have a bank account, nine percent more likely to have a bank card and two percent more likely to have a mortgage. These results suggest that literacy (and thus maybe also financial literacy) affects the use of banking services.[16] Households with an adult who has formal employment are eight (nine) percent more likely to have a bank account (card), but not more likely to have a mortgage. Finally, our multivariate results suggest that there is a significant impact of social integration and religion on the use of banking services. Not speaking the official language reduces the likelihood of having a bank account (card) by seven (five) percent, while being a Muslim reduces the probability of having a bank account / card by eight and seven percent, respectively. Neither of the two variables enters significantly in the mortgage regression.

The dummy variable *LITS 2010* reported in columns (3, 6, 9) shows whether, controlling for changes in household characteristics and survey composition, the use of bank services increased between 2006 and 2010. We find that households were seven percent more likely to have a card and four percent more likely to have a mortgage in 2010 than in 2006, while there is no significant difference for the use of bank accounts. These findings suggest that while the access to basic banking services has not improved over time, the scope of available banking services has.

In unreported robustness tests – available on request – we test whether the relationship between the different household characteristics and the use of bank services vary between the

[15] The results on gender are different from the findings of Atiero, Beck and Iacovone (2011) for Southern and Eastern Africa.
[16] See van Rooij, Lusardi and Alessie (2007) and Lusardi (2008) for U.S. and Dutch based evidence on the link between financial literacy and financial market participation

2006 and the 2010 waves of LITS. Specifically, we re-ran models (3), (6) and (9) of Table 6, interacting all variables with a 2010 dummy. Few of the interaction terms are significant. Households with a university graduate are less likely to have an account in 2010 than in 2006, though the overall effect is still positive (Table 6, column 2). Self-employed are even less likely to have a card in 2010 than in 2006. Finally, male-headed households are more likely to have a mortgage in 2010, but not in 2006. All other relationships between household characteristics and the use of banking services do not differ significantly between the 2006 and the 2010 waves, a results that supports the robustness of our findings.

How robust are our household-level results across countries? To check the robustness of our results we replicate model 3 of Table 6 for each country separately. The results displayed in Table 7 suggest that the positive relation between the use of a bank account and household income and household education are highly robust. While we find substantial variation in the economic magnitude of their effect, household *Expenses* yield a highly significant coefficient in each of our country-specific regressions except for Estonia and Tajikistan. Similarly, our indicator of education (*University degree*) is significant at the 10 percent level in 24 of the 29 regressions. By contrast, the effects of household location (*Urban*), economic activity (*Formal employed*), transfer income receivers, demographic structure (*Size, Age, Male*), social status (*Language*) and religion (*Muslim*) are less robust across countries.[17]

Table 7 here

[17] The estimates for some countries are imprecise, due to the fact that the prevalence of bank accounts is either very low (less than 10% in Armenia, Georgia, Kyrgyzstan, Moldova, Tajikistan, and Uzbekistan) or very high (more than 90% in Slovenia and Estonia). Several variables are dropped from the country-specific probit regressions as they perfectly predict the outcome.

B. Bank-ownership, financial infrastructure, and the use of banking services over time

This section explores how changes in bank ownership, deposit insurance and creditor protection affect the share of households which use banking services. Exploiting the fact that we have two survey waves at different points in time, we can relate the within-country variation in the use of banking services to within-country variation in our financial sector indicators by controlling for country fixed effects and changes in the composition of the sample, using regression model (2).

Before presenting regression results, we briefly discuss some ocular econometrics, as presented in Figures 1 – 3. Here we plot the changes in the use of bank accounts, cards and mortgages against changes in our different country-level variables.

Figures 1-3 here

Figure 1 shows that changes in foreign bank ownership are positively associated with changes in the use of bank accounts and cards, but hardly associated with changes in the use of mortgages. Changes in state ownership are negatively associated with changes in the use of accounts, cards and mortgages, suggesting that the privatization of state banks has gone hand in hand with an increase in the share of banked households. Figure 2 shows that changes in deposit insurance coverage are negatively associated with the use of accounts and cards, while there is no consistent relationship between changes in creditor rights or credit information sharing and changes in the use of cards or mortgages. Figure 3 shows that changes in NPL are negatively associated with the use of bank accounts and cards, but not with the use of mortgages. Inflation is hardly associated with changes in the use of banking services. Changes in GDP per capita seems to be negatively (though statistically not

significantly) associated with changes in the use of bank accounts and mortgages but positively with changes in the use of cards.

Table 8 presents a multivariate analysis of the relation between changes in bank-ownership, deposit insurance and creditor protection and changes in the use of banking services over time. Here, we control for country-fixed effects and the same household characteristics as in Table 5. The coefficient estimates on the country-level indicators thus measure the within-country relationship between use of financial services and our country-level indicators, controlling for sample composition. For each dependent variable we first present a specification including our indicators of bank ownership and macroeconomic controls. We then present a specification adding selected indicators of the financial infrastructure: For the dependent variable *Account*, we include deposit insurance, but not credit information or creditor rights. For the dependent variable *Card*, we include our measures of deposit insurance as well as those of creditor protection which may affect the use of credit cards. For the dependent variable Mortgage we employ credit information and creditor rights, but not deposit insurance, as the latter should only affect deposit behavior. Across all regressions, we also include the share of non-performing loans in total loans as gauge of the severity of the crisis. While Panel A uses the full sample, Panel B reports subsample analyses in an attempt to control for demand and supply effects.

Table 8 here

The Table 8 Panel A regression results confirm that changes in bank ownership impact on the use of banking services. Our key finding is that a reduction in state ownership of banks is associated with a significant increase in the use of bank accounts, bank cards and mortgages. The impact of bank privatization on the use of bank accounts, bank cards and mortgages is

not only statistically significant, but also economically relevant. Our results suggest that the reduction of state ownership of Albanian banks from 21 percent in 2003-2005 to 0 percent in 2007-2009 increased the use of bank accounts, bank cards and mortgages by 15, 14 and 8 percent respectively. Between 2006 and 2010 the observed increases in the use of banking services in Albania are 27 percent for bank accounts, 15 percent for bank cards and 27 percent for mortgages, so that the privatization process can explain a large share of this increased use of banking services.

Foreign bank ownership, is not significantly associated with the use of bank accounts or mortgages, but is positively associated with the use of bank cards. The impact of foreign bank ownership on the use of bank cards is also sizeable. Our results suggest that the increase in the market share of foreign banks in Macedonia from 49 percent in 2003-2005 to 90 percent in 2007-2009 is associated with an increase in the use of bank cards by 20 percent. This corresponds to half of the actual increase in the use of cards in this country between 2006 and 2010.

Our multivariate results suggest that there is no consistent relationship between changes in the financial infrastructure and the use of banking services. Deposit insurance coverage is not significantly associated with the use of bank accounts or cards, while the quality of credit information systems is not significantly associated with the use of cards or mortgages. Creditor rights are – surprisingly – negatively and significantly associated with the use of cards.

Considering our macroeconomic controls we find a negative relationship between changes in non-performing loans, i.e. the severity of the financial crisis, and the use of bank accounts, bank cards and mortgages, though the coefficient does not enter significantly for bank cards. Inflation, is significantly and positively associated with the use of accounts and

cards, but not with the use of mortgages. Finally, we find a strong and significant relationship between GDP per capita and the use of mortgages, but not with the use of accounts or cards.

The significant effects of bank privatization and foreign bank market share observed in Panel A of Table 8 may be driven by reverse causality: Foreign banks may increase their presence and activities in countries where they expect an increase in demand for advanced financial services, such as credit cards. Likewise, governments may privatize banks in countries where an anticipated increase in the demand for financial services makes a successful privatization more likely. In Panel B of Table 8 we use subsample analyses to account for reverse causality due to anticipated demand. First, we limit our sample to households that have a bank account, and thus demonstrate a demand for financial services, and test for the relationship between household and country-level variables and the use of bank cards and mortgages (Columns 1 and 2). This sample restriction focuses on the supply of financial services in addition to a simple bank account. We continue to find that foreign bank ownership is positively and significantly associated with the use of bank cards, while the share of government-owned banks is negatively and significantly associated with the use of mortgages by home owners.

Our second approach to control for financial service demand at the household level is to limit our sample to households that express a high level of trust in financial institution. The LITS survey elicits households' trust in a range of political institutions, non-governmental organizations (NGO's), law enforcing agencies, as well as "banks and the financial system". We restrict our sample to those households which report a higher level of trust in the banks and the financial system than their average trust level in political institutions, NGO' and law enforcement institutions of their home country (Columns 3 to 5). In these specifications we again find that the foreign bank share is associated with a higher use of bank cards, while a higher share of government-owned banks is associated with lower use of bank accounts, bank

cards and mortgages. Together, these results suggest that the correlation between changes in bank ownership and the increased use of banking services is not primarily driven by (anticipated) demand but rather by supply side effects.

C. *Bank-ownership, financial infrastructure, and the composition of the banked population*

The results displayed in Table 7 show that the use of bank services across households displays strong country-specific patterns. These differences in the composition of banked households may be related to the large differences in economic development (GDP per capita) across our sample of countries. They may, however, also be driven by differences in the ownership structure of the banking sector, as well as the financial infrastructure. Our previous results focus on the relationship between the level of bank ownership, the financial infrastructure and household use of banking services (using within-country variation). Bank ownership, deposit insurance, credit information sharing or creditor rights may, however, also have an impact on the composition of the banked population. In this section, we focus on four household characteristics and gauge whether bank ownership and the financial sector infrastructure have a differential impact on urban, richer, better educated and formally employed households, using regression model (3). Tables 9 and 10 report the results. In all specifications we control for the main effect of all household level characteristics employed in Table 5, as well as country-year fixed effects. The latter allow us to focus on the cross-sectional compositional effects of bank ownership and the financial infrastructure, while making full use of our repeated cross-section data. Our variables of interest in this section are the interaction terms of *Foreign banks*, *State banks*, *Deposit insurance*, *Credit information* and *Creditor rights* with the household characteristics *Urban*, *Expenses*, *University degree*, and *Formal employed* .

Table 9 here

The results in Table 9 provide some evidence for cherry picking behavior by foreign banks. Specifically, households where the respondent is formally employed are more likely to use a bank account, a card or a mortgage in countries with higher shares of foreign banks. We also find that households with higher income and where the respondent has a university degree are more likely to have a mortgage in countries with a higher share of foreign banks. To assess the economic relevance of these compositional effects compare for example the impact of being formal employed in Slovenia with 21 percent foreign bank assets to Croatia with 91 percent foreign bank assets. Our estimates suggest that a household with formal employment is not more likely to have a bank account than a household without formal employment in Slovenia, while in Croatia households with formal employment are 10 percentage points more likely to have a bank account than those without.

We find hardly any evidence for the hypothesis that state-bank ownership leads to more inclusive financial sectors. Poorer or rural households are not more likely to have a bank account, a card or a mortgage in countries with a higher share of state-owned banks. We do, however, find that the use of bank cards and mortgages is less conditional on household education levels in countries with more state-owned banks.

Finally, we find that economic development (as proxied by GDP per capita) benefits mostly richer and urban households where the respondent has a university degree and is formally employed.

The Table 10 regressions suggest that in countries with more generous deposit insurance coverage urban households and households with formal employment are more likely to have a bank account or card. Again to assess the economic relevance of these effects

compare Poland where deposit insurance is 3 times GDP per capita to neighboring Ukraine where deposit insurance is only 20 percent of GDP per capita. Our estimates suggest that urban households are not more likely to have a bank account than rural households in Ukraine, whereas the rural-urban gap is 3 percentage points in Poland. In unreported regressions, we confirm our findings on the role of deposit insurance using a dummy variable indicating the existence of an explicit deposit insurance scheme.

The Table 10 regressions show no effects of credit information sharing on the composition of the banked population, while creditor rights have a limited effect on the type of households which are banked. Households where the respondent is formally employed or has a university degree are more likely to have a bank card in countries with stronger creditor rights. However, this effect is not confirmed for the use of mortgages.

Table 10 here

Overall, the results in Tables 9 and 10 suggest that bank ownership and the development of the financial infrastructure do have compositional effects on the banked population. Our results are consistent with hypotheses that see foreign banks cherry-picking their clients rather than broadening access. By contrast they provide very little support to the hypothesis that state bank ownership broadens the use of financial services to marginalized groups. We find no evidence to support the hypothesis that financial infrastructure improvements mainly benefit previously unbanked groups. On the contrary, if anything generous deposit insurance coverage and improved creditor protection seem to mostly encourage higher-income, urban and formally employed segments of the population to use banking services.

5. Conclusions

This paper explores the characteristics of households which use deposit, payment and credit services in transition countries and relates the level and composition of the banked population across countries to variations in bank ownership, deposit insurance and creditor protection. Using data across 28 transition economies and Turkey, we find a strong correlation of household location, income, economic activity and education with the use of banking services. We find evidence that the use of banking services is higher in countries where banks have been privatized and the market share of foreign banks has increased. Foreign bank ownership seems to encourage the use of bank services among households with formal employment, better education and higher income. By contrast, poorer households are not more likely to be banked in countries with higher shares of state-bank ownership. Our results further suggest that generous deposit insurance and better creditor protection mainly attract urban and richer segments of the population to the banking system.

Our result on the compositional effects of foreign bank ownership on the use of bank services are consistent with Beck and Martinez Peria (2010) who show for Mexico a reorientation of foreign entrants towards urban and richer areas of the country. Our finding that state ownership of banks does not lead to more inclusion of poorer households and household without formal employment provides support to the existing empirical literature (La Porta et al., 2002) suggesting a mission drift of these banks.

Our results shed doubt on the ability of structural policy to broaden the financial system to disadvantaged groups. Specifically, attempts to broaden the use of financial services through liberalization of the banking sector or more generous deposit insurance do not increase the likelihood that poorer, less educated and rural segments of the population use formal financial services. Similarly, a better contractual and information framework does not seem to foster financial inclusion. Our results do <u>not</u> imply that these policies do not foster

financial sector development, rather that it is difficult to target this development to certain groups.

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Figure 1. Change in bank ownership and the use of bank services

This figure plots the change in the country mean of *Account*, *Card* and *Mortgage* (2010 minus 2006) against the change in the country-level variables *Foreign banks* and *State banks* (all 2007-2009 minus 2003-2005). All variables are defined in Table 1.

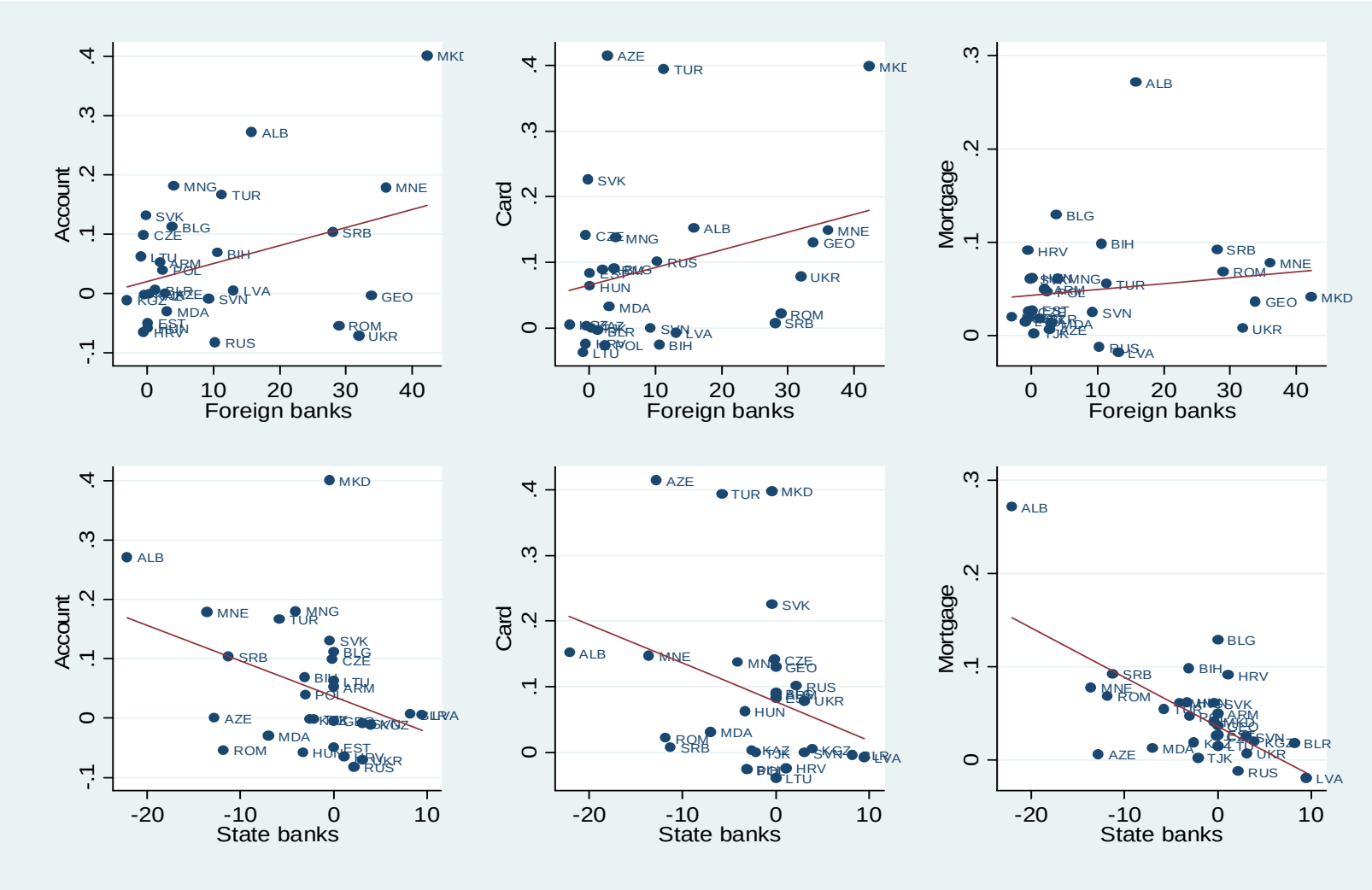

Figure 2. Change in financial insfrastructure and use of bank services

This figure plots the change in the country mean of *Card and Account or Mortgage* (2010 minus 2006) against the change in the country-level variables *Deposit insurance*, *Credit Infromation* and *Creditor rights* (each 2007-2009 minus 2003-2005). All variables are defined in Table 1.

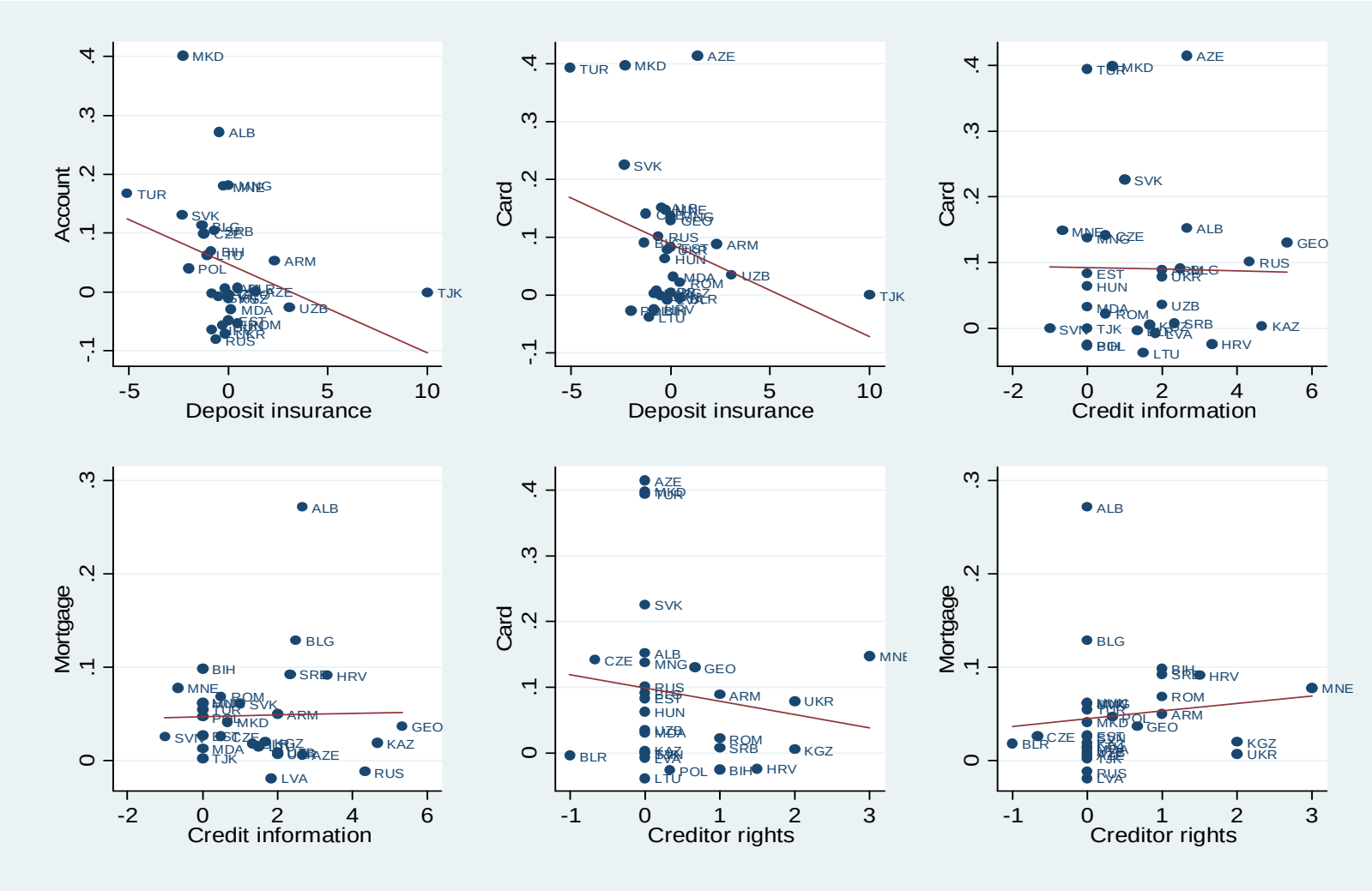

Figure 3. Change in macreconomic conditions and household use of bank services

This figure plots the change in the country mean of *Account*, *Card* and *Mortgage* (2010 minus 2006) against the change in the country-level variables NPL, *Inflation* and *GDP per capita* (each 2007-2009 minus 2003-2005). All variables are defined in Table 1.

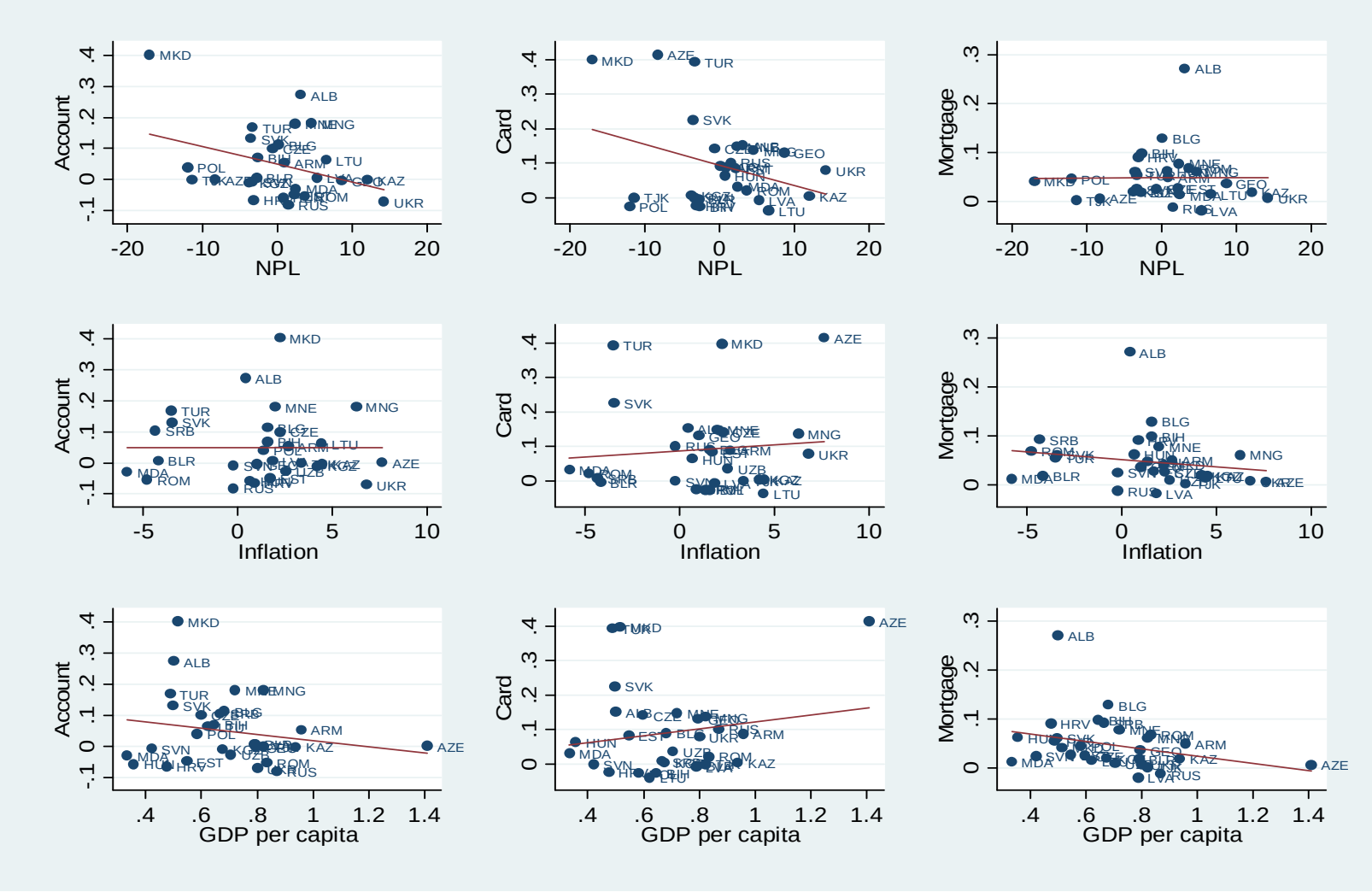

Table 1. Variable definitions and sources

Variable name	Definition	Source	Period of observation
Household-level data			
	Access to finance		
Account	Dummy=1 if a household member has a bank account, =0 otherwise	LITS	2006; 2010
Card	Dummy=1 if a household member has a debit or credit card, =0 otherwise	LITS	2006; 2010
Mortgage	Dummy=1 if the household owns its own dwelling and financed it mainly with a mortgage, =0 otherwise	LITS	2006; 2010
	Household characteristics		
Urban	Dummy =1 if household lives in an urban or metropolitan area, =0 otherwise	LITS	2006; 2010
Expenses	Household equivalized expenses using OECD scales in USD per year (Log)	LITS	2006; 2010
Self employed	Dummy =1 if main household income source is self-employment or farming, =0 otherwise	LITS	2006; 2010
Transfer receiver	Dummy =1 if main household income source is state or private transfer , =0 otherwise	LITS	2006; 2010
Size	Number of household members (adults & children)	LITS	2006; 2010
Age	Age of the household head in log years	LITS	2006; 2010
Male	Dummy =1 if household head is male, =0 if household head is female	LITS	2006; 2010
	Respondent characteristics		
University degree	Dummy=1 if respondent has a university degree, =0 otherwise	LITS	2006; 2010
Formal employed	Dummy =1 if respondent had formal labor contract in past 12 months , =0 otherwise	LITS	2006; 2010
Language	Dummy =1 if respondent speaks an official national language =0 otherwise	LITS	2006; 2010
Muslim	Dummy =1 if respondent is muslim, =0 otherwise	LITS	2006; 2010
Country-level data			
	Access to finance		
Credit / GDP	Private credit in % of GDP	EBRD	2003-2005;2007-2009
Composite	Composite index of access to financial services	Honohan	various
	Bank ownership, financial infrastrure and macroeconomic conditions		
Foreign banks	Assets share of foreign controlled banks in domestic banking system, in %	EBRD	2003-2005; 2007-2009
State banks	Assets share of state controlled banks in domestic banking system, in %	EBRD	2003-2005; 2007-2009
Deposit insurance	Deposit insurance coverage / per capita GDP	DKL, IADI	2003; 2007
Credit information	Information sharing index (scale: 0= worst , 6=best)	DB	2003-2005; 2007-2009
Creditor rights	Legal rights index for secured creditors (scale: 0= worst , 6=best)	DB	2003-2005; 2007-2009
NPL	Non performing loans (%)	EBRD	2003-2005; 2007-2009
Inflation	CPI inflation (in %)	EBRD	2003-2005; 2007-2009
GDP per capita	Per capita GDP in log USD	EBRD	2003-2005; 2007-2009

Sources: LITS: EBRD Life in Transition survey. EBRD: EBRD (2009). DB: www.doingbusiness.org. CGAP: www.cgap.org/financialindicators. DKL: Deminrgüc-Kunt, Karacaovalli & Laeven (2005). Honohan: Honohan (2008). IADI: International Association of Deposit Insurers: www.iadi.org.

Table 2. Use of banking services by country

This table reports means for each variable by country and observation period. The means for the variables *Account, Card, Mortgage* are adjusted for sampling weights in the LITS surveys. The column *Test* reports the coeffcient of the dummy variable *LITS 2010* (1 for observations from the 2010 survey, 0 otherwise) in a regression of Account, Card, or Mortgage on household characteristics using pooled 2006 and 2010 observations per country. See Table 7 for details. Definitions and sources of the variables are provided in Table 1.

	Account (share)			Card (share)			Mortgage (share)			Credit / GDP (in %)		Composite (in %)
Period	2006	2010	Test	2006	2010	Test	2006	2010	Test	2003-2005	2007-2009	various
Albania	0.18	0.45	***	0.17	0.32	***	0.03	0.30	***	11	34	34
Armenia	0.04	0.10	**	0.04	0.13	**	0.01	0.06	***	7	18	9
Azerbaijan	0.01	0.01		0.02	0.43	***	0.00	0.01		8	16	17
Belarus	0.15	0.16		0.23	0.23	***	0.04	0.06		14	30	16
Bosnia	0.40	0.47		0.29	0.26	*	0.03	0.13	***	28	49	17
Bulgaria	0.18	0.29		0.42	0.51		0.07	0.20	***	34	70	56
Croatia	0.80	0.73	***	0.76	0.73	***	0.09	0.18	***	55	68	42
Czech Rep	0.79	0.89		0.61	0.75	***	0.17	0.19		33	49	85
Estonia	0.94	0.89	***	0.82	0.90	***	0.11	0.14		42	95	86
Georgia	0.05	0.04		0.09	0.22	***	0.01	0.04		11	29	15
Hungary	0.64	0.58	**	0.50	0.56	***	0.29	0.35	**	45	64	66
Kazakhstan	0.11	0.11		0.12	0.13		0.03	0.05	*	28	54	48
Kyrgyzstan	0.02	0.01		0.01	0.01		0.01	0.03		7	14	1
Latvia	0.74	0.75		0.71	0.70		0.08	0.06		53	94	64
Lithuania	0.69	0.76	*	0.53	0.50	***	0.07	0.08		31	64	70
Macedonia	0.20	0.60	***	0.14	0.54	***	0.03	0.07		22	41	20
Moldova	0.09	0.06	**	0.10	0.14		0.03	0.05	*	7	0	13
Mongolia	0.32	0.50	***	0.10	0.23	***	0.02	0.08	***	20	27	25
Montenegro	0.29	0.47	***	0.21	0.36	***	0.01	0.09	***	17	85	.
Poland	0.66	0.70		0.43	0.40	***	0.09	0.13	***	31	52	66
Romania	0.27	0.21	***	0.35	0.38		0.09	0.16	***	16	38	23
Russia	0.31	0.23	***	0.21	0.31	***	0.04	0.03		24	41	69
Serbia	0.57	0.67	***	0.42	0.43		0.04	0.13	***	26	41	.
Slovak Rep	0.79	0.92		0.48	0.71		0.11	0.17		32	46	83
Slovenia	0.97	0.96	*	0.75	0.75	***	0.09	0.12	*	49	86	97
Tajikistan	0.01	0.01		0.01	0.01		0.01	0.01		18	26	16
Turkey	0.25	0.41	***	0.31	0.70	***	0.01	0.07	*	18	32	49
Ukraine	0.15	0.08	***	0.18	0.26	***	0.02	0.03	*	27	68	24
Uzbekistan	0.04	0.01	***	0.02	0.08		0.00	0.02		25	15	16
Mean	0.37	0.42		0.31	0.40		0.06	0.10		25	46	42

Table 3. Summary statistics

This table reports summary statistics for each variable by observation period. The means for the household level variables are not adjusted for sampling weights in the LITS surveys. Definitions and sources of the variables are provided in Table 1.

Panel A. Household-level data

	Survey year: 2006					Survey year: 2010				
Variable name	Obs.	Mean	Std. Dev.	Min	Max	Obs.	Mean	Std. Dev.	Min	Max
Account	28133	0.36	0.48	0	1	31540	0.42	0.49	0	1
Card	28129	0.30	0.46	0	1	31540	0.40	0.49	0	1
Mortgage	25058	0.05	0.22	0	1	27683	0.10	0.30	0	1
Urban	28153	0.57	0.49	0	1	31544	0.59	0.49	0	1
Expenses	28089	7.48	0.91	1.0	10.3	29579	7.86	0.89	1.7	11.4
Self employed	28153	0.17	0.38	0	1	31544	0.17	0.38	0	1
Transfer receiver	28153	0.34	0.48	0	1	31544	0.32	0.47	0	1
Size	28153	3.28	1.83	1	12	31544	3.09	1.71	1	12
Age	28149	3.89	0.33	2.9	4.6	31381	3.88	0.33	2.9	4.8
Male	28153	0.70	0.46	0	1	31396	0.60	0.49	0	1
University degree	28146	0.19	0.39	0	1	31544	0.20	0.40	0	1
Formal employed	28153	0.32	0.47	0	1	31525	0.37	0.48	0	1
Language	28124	0.94	0.23	0	1	31543	0.93	0.25	0	1
Muslim	28123	0.23	0.42	0	1	30884	0.24	0.43	0	1

Panel B. Country-level data

	Period: 2003 - 2005					Period 2007 -2009				
Variable name	Obs.	Mean	Std. Dev.	Min	Max	Obs.	Mean	Std. Dev.	Min	Max
Foreign banks	29	50.3	31.5	4.3	98.3	28	62.2	31.2	6.6	98.4
State banks	29	15.8	19.8	0.0	69.0	28	11.4	17.5	0.0	77.2
Deposit insurance	29	2.1	2.6	0.0	10.0	29	1.9	2.2	0.0	10.0
Credit information	29	2.4	1.9	0.0	5.0	29	3.8	1.6	0.0	6.0
Creditor rights	29	5.9	2.0	2.0	9.0	29	6.3	2.2	2.0	10.0
NPL	27	6.9	6.1	0.3	28.2	27	6.8	4.0	1.9	17.2
Inflation	29	6.6	4.1	0.6	15.9	29	7.8	4.2	2.8	17.1
GDP per capita	29	8.0	1.0	5.7	9.7	29	8.7	0.9	6.6	10.1

Table 4. Country-level variables and use of banking services - Pairwise correlations

This table reports Spearman rank correlations for the country mean of *Account, Card, Mortgage* and our country level explanatory variables. The means for the variables *Account, Card, Mortgage* are adjusted for sampling weights in the LITS survey. * indicates significance at the .05 level. Definitions and sources of the variables are provided in Table 1.

Panel A. Cross sectional correlations

This panel reports rank correlations for 2010 means of *Account, Card, Mortgage* and 2007-2009 means of our country level explanatory variables.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
[1] Account	1										
[2] Card	0.83 *	1									
[3] Mortgage	0.68 *	0.61 *	1								
[4] Foreign banks	0.54 *	0.41 *	0.65 *	1							
[5] State banks	-0.20	0.03	-0.35	-0.67 *	1						
[6] Deposit insurance	0.27	0.38	0.41 *	0.14	-0.05	1					
[7] Credit information	0.14	0.26	0.28	0.29	-0.25	0.12	1				
[8] Creditor rights	0.15	0.18	0.31	0.42 *	-0.18	0.06	-0.27	1			
[9] NPL	-0.26	-0.33	-0.40 *	-0.10	-0.13	-0.29	-0.30	0.19	1		
[10] Inflation	-0.70 *	-0.58 *	-0.74 *	-0.73 *	0.37	-0.48 *	-0.07	-0.29	0.27	1	
[11] GDP per capita	0.81 *	0.85 *	0.57 *	0.30	0.08	0.23	0.28	0.03	-0.38 *	-0.54 *	1

Panel B. Correlations of changes over time

This panel reports rank correlations for changes in the means of *Account, Card, Mortgage* (2010 minus 2006) and changes in the means of our country level explanatory variables (2007-2009 minus 2005-2005).

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
[1] Account	1										
[2] Card	0.41 *	1									
[3] Mortgage	0.41 *	0.19	1								
[4] Foreign banks	0.21	0.36	0.15	1							
[5] State banks	-0.38	-0.41 *	-0.44 *	-0.25	1						
[6] Deposit insurance	-0.40 *	-0.09	-0.33	0.01	0.03	1					
[7] Credit information	-0.19	0.10	-0.15	-0.06	0.31	0.03	1				
[8] Creditor rights	-0.24	-0.16	0.30	0.23	-0.02	0.13	0.06	1			
[9] NPL	-0.20	-0.09	-0.06	0.22	0.03	0.20	0.30	0.12	1		
[10] Inflation	0.13	0.05	-0.28	-0.18	0.08	0.15	0.20	0.16	0.12	1	
[11] GDP per capita	-0.09	0.05	-0.33	0.13	0.08	0.49 *	0.43 *	0.15	0.28	0.51 *	1

Table 5. Household characteristics and the use of banking services - Univariate tests

The table reports means for each variable for the full sample as well as for the sub-samples of households with and without a bank account, with and without a bank card, and with and without a mortgage. All means are adjusted for sample weighting in the LITS survey. The sample tests report the results of linear independant sample tests which examine whether household characteristics differ for households with and without a bank account, bank card or mortgage. ***, **, * denote significance at the 0.01, 0.05 and 0.10-level. Definition and sources of the variables are provided in Table 1.

Panel A. LITS 2006

	All Households	Household has bank account			Household has bank card			Household has mortgage		
		yes	no	Sample test	yes	no	Sample test	yes	no	Sample test
Urban	0.60	0.69	0.55	***	0.73	0.54	***	0.81	0.56	***
Expenses	7.53	8.14	7.17	***	8.20	7.23	***	8.11	7.45	***
Self employed	0.17	0.12	0.19	***	0.11	0.19	***	0.10	0.18	***
Transfer receiver	0.35	0.26	0.40	***	0.19	0.42	***	0.23	0.37	***
Size	2.86	2.57	3.02	***	2.64	2.95	***	2.64	2.94	***
Age	3.85	3.81	3.88	***	3.77	3.87	***	3.77	3.87	***
Male	0.67	0.69	0.66	***	0.69	0.66	***	0.69	0.68	
University degree	0.20	0.26	0.17	***	0.28	0.17	***	0.30	0.20	***
Formal employed	0.35	0.50	0.27	***	0.56	0.26	***	0.52	0.33	***
Language	0.94	0.96	0.93	***	0.96	0.94	***	0.96	0.94	***
Muslim	0.22	0.08	0.30	***	0.09	0.28	***	0.06	0.23	***

Panel B. LITS 2010

	All Households	Household has bank account			Household has bank card			Household has mortgage		
		yes	no	Sample test	yes	no	Sample test	yes	no	Sample test
Urban	0.59	0.65	0.55	***	0.68	0.53	***	0.66	0.55	***
Expenses	7.85	8.34	7.51	***	8.30	7.55	***	8.19	7.78	***
Self employed	0.18	0.13	0.22	***	0.12	0.23	***	0.15	0.19	***
Transfer receiver	0.31	0.27	0.33	***	0.24	0.35	***	0.28	0.33	***
Size	3.13	2.86	3.33	***	2.99	3.23	***	2.96	3.22	***
Age	3.86	3.84	3.88	***	3.82	3.88	***	3.86	3.90	***
Male	0.60	0.60	0.59	**	0.60	0.59	**	0.65	0.59	***
University degree	0.20	0.22	0.18	***	0.24	0.17	***	0.24	0.19	***
Formal employed	0.37	0.47	0.29	***	0.49	0.28	***	0.43	0.35	***
Language	0.93	0.94	0.92	***	0.94	0.92	***	0.95	0.93	***
Muslim	0.26	0.12	0.36	***	0.17	0.32	***	0.18	0.27	***

Table 6. Household characteristics and the use of banking services - Multivariate analysis

The dependent variables in this table are *Account* (models 1-3), *Card* (models 4-6) and *Mortgage* (7-9). All models report marginal effects of probit estimations and include country fixed effects. Observations are weighted according to sample weighting in the LITS survey. Standard errors are reported in brackets and are adjusted for clustering at the country level. ***, **, * denote significance at the 0.01, 0.05 and 0.10-level. All variables are defined in Table 1.

Dependant variable	*Account*			*Card*			*Mortgage*		
Survey year	*2006*	*2010*	*2006,2010*	*2006*	*2010*	*2006,2010*	*2006*	*2010*	*2006,2010*
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Urban	0.0594***	0.026	0.0442***	0.0812***	0.0498***	0.0690***	0.0262***	0.0199***	0.0241***
	[0.0149]	[0.0190]	[0.0133]	[0.0151]	[0.0167]	[0.0141]	[0.00316]	[0.00738]	[0.00417]
Expenses	0.175***	0.125***	0.151***	0.147***	0.132***	0.153***	0.00981***	0.0190***	0.0141***
	[0.0104]	[0.0147]	[0.0109]	[0.00715]	[0.0175]	[0.0117]	[0.00221]	[0.00378]	[0.00234]
Self employed	0.020	-0.022	0.000	-0.0464***	-0.105***	-0.0777***	-0.006	-0.005	-0.005
	[0.0205]	[0.0176]	[0.0154]	[0.0168]	[0.0167]	[0.0140]	[0.00382]	[0.00732]	[0.00448]
Transfer receiver	-0.0992***	-0.0773***	-0.0969***	-0.121***	-0.107***	-0.119***	-0.003	-0.006	-0.00680*
	[0.0266]	[0.0202]	[0.0208]	[0.0119]	[0.0251]	[0.0180]	[0.00368]	[0.00707]	[0.00400]
Size	0.0214***	0.0197***	0.0192***	0.0274***	0.0326***	0.0319***	0.00277***	0.00328*	0.00244*
	[0.00567]	[0.00597]	[0.00453]	[0.00367]	[0.00870]	[0.00567]	[0.000921]	[0.00193]	[0.00132]
Age	-0.030	-0.0656**	-0.0467**	-0.0694***	-0.0645**	-0.0783***	-0.0324***	-0.0426***	-0.0384***
	[0.0242]	[0.0288]	[0.0235]	[0.0175]	[0.0327]	[0.0183]	[0.00468]	[0.0123]	[0.00782]
Male	0.0348***	0.0210*	0.0323***	0.010	0.009	0.008	0.001	0.00769*	0.00556**
	[0.00662]	[0.0114]	[0.00570]	[0.00725]	[0.0101]	[0.0101]	[0.00203]	[0.00421]	[0.00238]
University degree	0.145***	0.120***	0.130***	0.0915***	0.0945***	0.0893***	0.0104***	0.0211***	0.0163***
	[0.0132]	[0.0179]	[0.0147]	[0.0146]	[0.0138]	[0.0139]	[0.00322]	[0.00701]	[0.00367]
Formal employed	0.0749***	0.0756***	0.0761***	0.0798***	0.103***	0.0936***	0.002	0.003	0.004
	[0.0130]	[0.0182]	[0.0119]	[0.0101]	[0.0148]	[0.0105]	[0.00262]	[0.00392]	[0.00262]
Language	0.0741***	0.0839**	0.0663***	0.029	0.0505*	0.0470**	0.006	0.015	0.006
	[0.0269]	[0.0344]	[0.0255]	[0.0288]	[0.0286]	[0.0228]	[0.00676]	[0.0119]	[0.00878]
Muslim	-0.0922***	-0.111**	-0.0802***	-0.0653***	-0.097	-0.0704**	-0.003	0.003	0.002
	[0.0179]	[0.0566]	[0.0269]	[0.0161]	[0.0749]	[0.0303]	[0.00374]	[0.0120]	[0.00639]
LITS 2010			0.026			0.0731***			0.0403***
			[0.0274]			[0.0253]			[0.00754]
Method	Probit	Probit	Probit	Probit	Probit	Probit	Probit	Probit	Probit
Pseudo R2	0.45	0.42	0.42	0.39	0.29	0.33	0.19	0.13	0.15
Country fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
# Households	28'001	29'176	57'177	27'997	29'176	57'173	24'944	25'717	50'661
# countries	29	29	29	29	29	29	29	29	29

Table 7. Household-level determinants of *Account* by country

This table reports marginal effects of selected household-level explanatory variables for the dependent variable *Account* based on regressions by country. The estimated probit model for each country is identical to model (3) in Table 5 (excluding country fixed effects). Non reported variables included in each regression are *Self employed*, *Size* and *Age*. Observations are weighted according to sample weighting in the LITS survey. ***, **, * denote significance at the 0.01, 0.05 and 0.10-level. All variables are defined in Table 1.

Explanatory variable: Country	Urban	Expenses	Transfer receiver	Male	University degree	Formal employed	Language	Muslim	LITS 2010	Obs.	Pseudo R2
Full sample	0.0442***	0.151***	-0.0969***	0.0323***	0.130***	0.0761***	0.0663***	-0.0802***	0.0263	57177	0.423
Albania	0.123***	0.108***	-0.134***	0.006	0.294***	0.0560*	0.020	-0.017	0.241***	1850	0.21
Armenia	0.004	0.0494***	-0.007	0.005	0.0326***	0.009	0.017		0.0341***	1949	0.21
Azerbaijan	0.000	0.00602*		-0.001	0.0284**	-0.004	-0.064		-0.002	1448	0.19
Belarus	0.0417**	0.0739***	-0.018	0.025	0.0789***	0.035	0.044		-0.014	1715	0.10
Bosnia	0.0612**	0.217***	-0.029	0.000	0.035	0.174***	-0.0878*	-0.160***	0.034	1931	0.14
Bulgaria	0.0890***	0.152***	-0.006	0.0567***	0.0510**	0.0605**	-0.150	-0.0656**	0.028	1886	0.14
Croatia	0.0537**	0.130***	-0.0886***	0.0432*	0.0817***	0.0704***	0.262***	-0.097	-0.110***	1890	0.18
Czech Rep	0.024	0.0819***	-0.219***	0.018	0.0488***	0.0406**			0.020	1887	0.35
Estonia	-0.0221*	0.010	-0.0458**	0.000	0.014	0.009	0.0477***	-0.642***	-0.0521***	1900	0.10
Georgia	0.006	0.0155***	-0.00692*	0.004	0.0127**	0.0176**		0.010	-0.001	1918	0.32
Hungary	0.136***	0.162***	-0.180***	0.028	0.249***	0.0954***			-0.0658**	1902	0.26
Kazakhstan	-0.006	0.0606***	0.024	0.006	0.0519***	0.0284*	-0.004	-0.018	-0.0301**	1871	0.07
Kyrgyzstan	0.000	0.00330**	0.000	0.002	0.0149*	0.002	0.00280*	-0.00945*	-0.00441**	1953	0.25
Latvia	-0.0600**	0.151***	-0.0989***	0.007	0.119***	0.0706***	0.147***		0.042	1456	0.23
Lithuania	-0.0440*	0.191***	0.042	0.011	0.0776***	0.0617*	0.254***	0.015	-0.022	1920	0.14
Macedonia	0.107***	0.205***	-0.0639*	0.020	0.0642*	0.0626**	0.052	-0.243***	0.378***	2022	0.23
Moldova	0.0230*	0.0448***	0.004	0.005	0.0807***	0.007	-0.001	0.040	-0.0345***	1970	0.14
Mongolia	-0.0430*	0.186***	-0.153***	0.003	0.129***	0.035	-0.230*	0.066	0.109***	1917	0.14
Montenegro	-0.027	0.0882***	-0.183***	0.042	0.123***	-0.017	0.182***	0.026	0.167***	1887	0.08
Poland	0.0759***	0.244***	-0.0684*	-0.001	0.171***	0.165***	0.125	-0.429*	0.009	2245	0.23
Romania	0.130***	0.125***	0.012	0.0593***	0.150***	0.0551**	0.039		-0.0716***	1969	0.17
Russia	0.013	0.134***	0.117***	0.017	0.139***	0.022	0.008	0.017	-0.133***	2368	0.07
Serbia	0.0850***	0.0953***	-0.144***	0.0490*	0.173***	0.138***	0.111	-0.298***	0.107***	2412	0.12
Slovak Rep	0.0465***	0.0905***	-0.132***	0.017	0.027	0.0716***	0.331**		0.000	1799	0.30
Slovenia	-0.006	0.0222***	-0.004	-0.003	0.009	0.008	-0.007	-0.019	-0.0174**	1841	0.10
Tajikistan	0.003	0.001		0.001	0.003	0.000	0.000	-0.001	0.000	1473	0.42
Turkey	0.0701***	0.167***	-0.0765**	0.030	0.161***	0.143***		-0.086	0.0810***	1866	0.09
Ukraine	0.013	0.0525***	-0.022	0.0283**	0.0368**	0.024	0.015	-0.0711***	-0.0634***	2444	0.11
Uzbekistan	0.000	0.0103*	-0.010	0.002	0.0203*	0.012	0.010	-0.009	-0.0330***	2426	0.08

Table 8. Country-level determinants of use of banking services

The dependent variables in this table are *Account*, *Card* and *Mortgage*. All models use pooled data from the LITS 2006 and 2010 surveys and include a full set of household-level explanatory variables as well as country fixed effects. All models report marginal effects from probit estimations. Observations are weighted according to sample weighting in the LITS survey. Standard errors are reported in brackets and are adjusted for clustering at the country level. ***, **, * denote significance at the 0.01, 0.05 and 0.10-level. All variables are defined in Table 1.

Panel A. Full sample estimates

Dependant variable	*Account*		*Card*		*Mortgage*	
Survey year:	*2006,2010*	*2006,2010*	*2006,2010*	*2006,2010*	*2006,2010*	*2006,2010*
Model	(1)	(2)	(3)	(4)	(5)	(6)
Foreign banks	0.002	0.002	0.00305*	0.00482***	0.000	0.000
	[0.00152]	[0.00151]	[0.00162]	[0.00143]	[0.000389]	[0.000300]
State banks	-0.00725**	-0.00709**	-0.00549**	-0.00716**	-0.00430***	-0.00429***
	[0.00347]	[0.00354]	[0.00267]	[0.00330]	[0.000985]	[0.000948]
Deposit insurance		-0.013		-0.006		
		[0.00867]		[0.0176]		
Credit information				0.009		0.005
				[0.0112]		[0.00375]
Creditor rights				-0.0581***		0.008
				[0.0206]		[0.00540]
NPL	-0.00972***	-0.00871***	-0.00671*	-0.006	-0.001	-0.00133**
	[0.00310]	[0.00318]	[0.00397]	[0.00373]	[0.000685]	[0.000600]
Inflation	0.0144**	0.0152**	0.011	0.0148**	0.00293*	0.002
	[0.00653]	[0.00628]	[0.00769]	[0.00641]	[0.00172]	[0.00174]
GDP per capita	-0.054	-0.066	0.042	0.011	0.0356***	0.0234**
	[0.0416]	[0.0464]	[0.0391]	[0.0460]	[0.00972]	[0.0113]
Method	Probit	Probit	Probit	Probit	Probit	Probit
Pseudo R2	0.43	0.43	0.33	0.33	0.16	0.16
Household variables	yes	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes	yes
# Households	52'339	52'339	52'337	52'337	46'139	46'139
# countries	27	27	27	27	27	27

Panel B. Subsample estimates controlling for financial service demand

In this panel we replicate our estimations from Panel A for the subsample of clients which have a bank account (columns 1-2) and clients which have a high level of trust in financial institutions (columns 3-5). The latter subsample is defined as those clients which have a higher level of trust in "Banks and the financial system" (on a scale of 1-5) than they have on average in political institutions, non-governmental organizations and law enforcement agencies of their country.

Sample:	Households with a bank account		Households with a high level of trust in banks		
Dependant variable	*Card*	*Mortgage*	*Account*	*Card*	*Mortgage*
Survey year:	*2006,2010*	*2006,2010*	*2006,2010*	*2006,2010*	*2006,2010*
Model	(1)	(2)	(3)	(4)	(5)
Foreign banks	0.00426**	0.000	0.003	0.00422**	0.000
	[0.00205]	[0.000580]	[0.00199]	[0.00192]	[0.000447]
State banks	-0.003	-0.00764***	-0.00769**	-0.00673**	-0.00550***
	[0.00361]	[0.00201]	[0.00344]	[0.00293]	[0.00118]
Deposit insurance	-0.0438**		-0.011	0.003	
	[0.0217]		[0.0113]	[0.0211]	
Credit information	-0.024	0.005		-0.008	0.008
	[0.0151]	[0.00694]		[0.0136]	[0.00476]
Creditor rights	-0.015	0.023		-0.026	0.012
	[0.0257]	[0.0144]		[0.0260]	[0.00907]
NPL	0.004	-0.002	-0.00663*	-0.003	-0.00212**
	[0.00505]	[0.00154]	[0.00390]	[0.00461]	[0.000860]
Inflation	0.007	0.004	0.010	0.011	0.003
	[0.00809]	[0.00334]	[0.00849]	[0.00802]	[0.00261]
GDP per capita	-0.093	0.0365*	-0.047	0.043	0.024
	[0.0647]	[0.0207]	[0.0596]	[0.0586]	[0.0170]
Method	Probit	Probit	Probit	Probit	Probit
(Pseudo) R2	0.17	0.11	0.44	0.33	0.16
Household variables	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes
# Households	20'456	17'431	24'716	24'714	21'600
# countries	27	27	27	27	27

Table 9. Compositional effects of bank ownership

The dependent variables in this table are *Account* (models 1,4), *Card* (models 2,5) and Mortgage (models 3,6). All models use pooled LITS 2006 and LITS 2010 data. All models report estimates from OLS regressions and include a full set of household level variables as well as country*year fixed effects. Observations are weighted according to sample weighting in the LITS survey. Standard errors are reported in brackets and are adjusted for clustering at the country level. ***, **, * denote significance at the 0.01, 0.05 and 0.10-level. All variables are defined in Table 1.

Survey year	*2006,2010*	*2006, 2010*	*2006,2010*	*2006, 2010*	*2006,2010*	*2006, 2010*
Dependent variable	*Account*	*Card*	*Mortgage*	*Account*	*Card*	*Mortgage*
Model	(1)	(2)	(3)	(4)	(5)	(6)
		Foreign banks *			***State banks ****	
Urban	0.000332	0.000217	0.000145	0.000	0.000	0.000
	[0.000222]	[0.000382]	[0.000219]	[0.000324]	[0.000558]	[0.000220]
Expenses	0.00023	0.00012	0.000229**	0.000	0.000	0.000
	[0.000369]	[0.000375]	[0.000101]	[0.000434]	[0.000440]	[0.000150]
University degree	-0.000032	0.000406	0.000284*	0.000	-0.000822**	-0.000437***
	[0.000403]	[0.000315]	[0.000156]	[0.000377]	[0.000389]	[0.000147]
Formal employed	0.00144***	0.00108***	0.000289*	-0.001	-0.001	0.000
	[0.000404]	[0.000334]	[0.000146]	[0.000596]	[0.000468]	[0.000217]
		GDP per capita*			**GDP per capita***	
Urban	-0.002	0.000	0.010	0.003	0.004	0.0112**
	[0.00735]	[0.00972]	[0.00611]	[0.00665]	[0.00724]	[0.00455]
Expenses	0.0221*	0.0464***	0.00761***	0.0248**	0.0480***	0.0104***
	[0.0127]	[0.00846]	[0.00267]	[0.0114]	[0.00633]	[0.00292]
University degree	0.001	0.0158*	0.0153***	0.001	0.0184**	0.0177***
	[0.0116]	[0.00810]	[0.00365]	[0.00945]	[0.00677]	[0.00402]
Formal employed	0.003	0.013	0.005	0.020	0.0255**	0.00776*
	[0.0116]	[0.0119]	[0.00367]	[0.0117]	[0.0118]	[0.00389]
Method	OLS	OLS	OLS	OLS	OLS	OLS
R2	0.47	0.37	0.10	0.47	0.37	0.10
Household variables	yes	yes	yes	yes	yes	yes
Country*year fixed effects	yes	yes	yes	yes	yes	yes
# Households	55'738	55'734	49'249	55'738	55'734	49'249
# countries	29	29	29	29	29	29

Table 10. Compositional effects of deposit insurance and creditor protection

The dependent variables in this table are *Account* (model 1), and *Card* (models 2, 3, 5) and *Mortgage* (models 4,6). All models use pooled LITS 2006 and LITS 2010 data. All models report estimates from OLS regressions and include a full set of household level variables as well as country*year fixed effects. Observations are weighted according to sample weighting in the LITS survey. Standard errors are reported in brackets and are adjusted for clustering at the country level. ***, **, * denote significance at the 0.01, 0.05 and 0.10-level. All variables are defined in Table 1.

Survey year	*2006,2010*	*2006, 2010*	*2006,2010*	*2006, 2010*	*2006,2010*	*2006, 2010*
Dependent variable	*Account*	*Card*	*Card*	*Mortgage*	*Card*	*Mortgage*
Model	(1)	(2)	(3)	(4)	(5)	(6)
	Deposit insurance*		***Credit information****		***Creditor rights****	
Urban	0.0110***	0.0121***	0.00537	0.00185	0.001	0.000
	[0.00251]	[0.00281]	[0.00635]	[0.00376]	[0.00543]	[0.00300]
Expenses	0.00543	0.00610*	0.00235	0.00118	0.000	0.000
	[0.00411]	[0.00352]	[0.00555]	[0.00168]	[0.00328]	[0.00167]
University degree	0.0016	0.00381	0.000299	0.00276	0.00752*	0.001
	[0.00390]	[0.00554]	[0.00524]	[0.00230]	[0.00417]	[0.00232]
Formal employed	0.00992*	0.00609*	0.00763	0.00134	0.0151***	-0.001
	[0.00506]	[0.00342]	[0.00714]	[0.00286]	[0.00429]	[0.00210]
	GDP per capita *		**GDP per capita ***		**GDP per capita ***	
Urban	-0.003	-0.002	-0.001	0.010	0.004	0.0119**
	[0.00583]	[0.00716]	[0.0104]	[0.00635]	[0.00768]	[0.00480]
Expenses	0.0243**	0.0472***	0.0466***	0.00951***	0.0498***	0.0106***
	[0.0117]	[0.00646]	[0.00852]	[0.00306]	[0.00680]	[0.00325]
University degree	-0.001	0.0172**	0.0197**	0.0157***	0.0169**	0.0182***
	[0.00984]	[0.00636]	[0.00783]	[0.00406]	[0.00664]	[0.00436]
Formal employed	0.0208*	0.0275**	0.022	0.008	0.0214*	0.00972**
	[0.0109]	[0.0118]	[0.0143]	[0.00492]	[0.0106]	[0.00464]
Method	OLS	OLS	OLS	OLS	OLS	OLS
R2	0.47	0.37	0.37	0.10	0.37	0.10
Household variables	yes	yes	yes	yes	yes	yes
Country*year fixed effects	yes	yes	yes	yes	yes	yes
# Households	57'177	57'173	57'173	50'661	57'173	50'661
# countries	29	29	29	29	29	29