DETERMINANTS OF TRUST IN
BANKS

by

Dmytro Lebedyev

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Thesis Supervisor: _____ Professor Elena Besedina

Approved by _____
          Head of the KSE Defense Committee, Professor Wolfram Schrettl

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Date _____

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Abstract

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This work considers individuals' characteristics, which influence their trust in banks. Evidence on these in related literature is scarce and controversial. In our analysis we use data from FINREP 2010 survey, which includes data on respondents' personal characteristics and their trust in different institutions. Two ordered probit models are employed to analyze trust in privately owned banks and state-owned banks. A multinomial logit model is used to analyze those respondents who simultaneously trust in both types of banks and those, who trust only in one type. The results indicate that place of residence as well as awareness and availability of information on financial markets affect trust in banks. Gender, age, education and income variables only marginally affect trust in privately owned banks. Trust in deposit insurance fund is found to be positively related to trust in banks. Thus, promotion of activities of Personal Deposit Insurance Fund will help to increase public trust in banks.

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INTRODUCTION

> *"There is an element in the readjustment of our financial system more important than currency, more important than gold, and that is the trust of the people.", - Franklin Roosevelt, 1933*

The study of trust has become increasingly popular in the last years following the events of the world financial crisis. While the events of 2008-2009 are mostly accounted to wrong policy decisions of the previous years, some researchers have pointed out trust in the development of the crisis. Sapienza and Zingales (2009) for example stress that the deterioration of trust in the financial system is one of the possible explanations for the recession in the American economy. As it is seen from the quote in the epigraph, similar ideas have been stated after previous crises as well.

The influence of trust on economic system was broadly discussed by researchers. Calderon et al. (2002) find empirical evidence that: "higher levels of trust are typically linked with more depth in the financial market, both from deposit and credit sides, and with lower interest rate margins and overhead costs".

President Yanukovich singled out restoring of trust in banking system as one of the central tasks of the new NBU management. Given that fulfilling this task is considered to be a way to restore credit activity of commercial banks, research on factors, determining trust in banking sector in Ukraine is highly desirable. Despite high policy relevance of these determinants, empirical evidence on them is scarce not only in Ukraine, but in general, as there are only a few studies on this topic.

Following Gambetta (2000) we define trust as "our expectation that another person (or institution) will perform actions that are beneficial or at least not detrimental to us, regardless of our capacity to monitor those actions". While "general trust" is important for all economic activity, in this work we narrow our interest to trust in the banking system. Confidence of the population in banks is absolutely essential for the banks existence, as their core activity involves people entrusting these institutions to store and increase the value of their savings. Developed countries typically have a fairly transparent system of ensuring the safety of bank deposits, something that Ukraine is lacking. Thus, decisions of individuals about using banking services are influenced heavily by trust in banking institutions. Empirical evidence from a Ukrainian survey (Coupe, 2010) supports this point of view.

In the light of the mentioned facts my thesis contributes to existing knowledge on trust in banking system by answering the following questions:

- What factors determine level of public trust in banks? Are other institutional arrangements such as credible deposit insurance important for general trust in banks?
- Are these factors different for private owned and state owned banks?

To answer these questions we use a nationwide survey, which includes standard demographical information as well as individuals' responses to questions about their trust in various financial institutions, their personal regards and attitudes. To determine the factors, influencing factors we employ ordered probit and multinomial logit techniques, relating various trust measures to a set of variables,

describing each individual. Such approach helps to see what personal characteristics are related to trust in specific type of bank. The mentioned approach was employed by other researchers (for example Knell and Stix, 2009) to answer similar questions. Further discussion of literature is provided in the next chapter.

The rest of the paper is structured as follows. Chapter 2 discusses the literature related to the topic; in chapter 3 the description of data is given. I provide empirical results in chapter 4, while chapter 5 concludes.

LITERATURE REVIEW

For a long time trust was not considered as a relevant economic factor and thus was not analyzed closely in the economics literature. During last decades, however, a number of studies appeared, showing the relationship between trust and economic growth or other measures of economic performance (Calderon et al. 2002, Sapienza and Zingales 2009, Stevenson and Wolfers 2011). Researchers mostly concentrated on the general trust between people; nevertheless there exists a number of works concerning trust in financial institutions and its determinants (Knell and Stix 2010, Beck and Brown 2010). This section is mainly devoted to discussion of these papers and showing the place of my work among them. We will start with brief discussion of papers, which explore the effects of trust and will continue with works, concerning trust in banks and its determinants.

Porta and Scazzieri (1997) theoretically investigate nature and role of trust in modern economy. After extensive analysis of economic history of last centuries they come to conclusion, that trust is absolutely essential for all economic activities and existence of civil society.

Some researchers approach the question of trust from the macro side, relating it to various macroeconomic fundamentals. For example Calderon et al. (2002) use a cross-country dataset, compiled by the World Bank to explore the significance of trust in the development and efficiency of the financial markets. They find empirical evidence, that "the level of trust is a significant determinant of financial development". Stevenson and Wolfers (2011) employ time-series methodology to

show, that confidence in banks and other public institutions has pro-cyclical nature and is negatively related to unemployment.

Microeconomic researchers concentrate on determining implications of trust for individuals. Guiso et al (2008) study dependence between trust and stock market participation using Dutch and Italian micro data. They find that participation in the stock market in the form of buying stocks is negatively affected by the lack of trust. Also individuals with lower level of trust seem to trade stocks less. Butler, Giuliano and Guiso (2009) analyze data from European Social Survey. They show that individuals' trustworthiness is dependent on their personal characteristics and is highly correlated with their trust in other people and institutions.

Despite high public and academic attention to the question of trust, literature related to determinants of trust is scarce and controversial, especially in the field of personal characteristics of individuals, which may affect trust. Malkina and Ivanova (2007) stress, that such characteristics are the main determinants of trust in banks and affect consumer choice between state owned and private banks. Mosch and Prast (2008), however, show that not all personal characteristics matter for trust: "people's trust is not affected by objective factors of age and gender, but depends negatively on education". To draw this conclusion they analyze a nationwide survey in Netherlands.

Contrary to the results of the papers previously discussed papers, Knell and Stix (2010) do not find effect of important education and other socio-demographic characteristics on trust. An interesting feature of their work is that time span of a series of annual surveys that they use to analyze evolution of determinants of trust covers both period of financial crisis and post-crisis years.

Another approach is employed by Mudd, Pashev and Valev (2010), who related previous crisis experience of individuals to their expectations of future losses. Authors show significance of this relationship and find that individuals, who experienced losses before, were the most likely to withdraw their funds from banks during the crisis of 2008-2009.

A study on a large dataset of 28 emerging economies was conducted by Beck and Brown (2010). These authors linked use of banking services not only to individuals' characteristics, but also to bank ownership structure, quality of controlling institutions etc. They conclude that socio-demographic characteristics of households such as income, education level and even religion seem to be important determinants of usage of banking services such as accounts, credit cards, etc.

Deposit insurance, though being a question of great policy importance is rarely accessed by researchers. Beck and Brown (2010) doubt that policymakers can broaden the use of financial services by less wealthy individuals through state-owned banks and deposit insurance.

As we see, there are quite a few works concerning trust in banking system. Evidence on determinants of trust is meager, though this question is of great importance, especially in the transition countries, which were hit by the banking crises. Moreover, banking business is relatively new to transition countries, and a relatively small share of population is accustomed to using bank services. Consequently, determinants of trust in banks in transition countries might be different from those in developed economies. In the light of the mentioned facts evidence on determinants of trust in banks in Ukraine is needed and our work provides it.

It is important to note that most of the mentioned papers measure level of trust in banking institutions by usage of banking products, primarily deposit accounts and cards. While this is sound for developed countries, in Ukraine the situation is different. A large share of population is "unbanked" not because of distrust but because of shortage of personal funds. Using a survey-based trust variable allows to differentiate between the determinants of not trusting banks and of not having a bank account. To my knowledge this work is the first to analyze trust in Ukrainian banks using this approach.

METHODOLOGY AND DATA DESCRIPTION

To our knowledge there exists no theoretical model, describing determinants of trust. In our analysis we will follow empirical methodology, proposed by other researchers – Knell and Stix (2009) and Beck and Brown (2010). To capture effects of different individual characteristics on trust in banks we relate trust variable *B* to sets of independent variables *G*, *D* and *I*:

$$B_i = \alpha G_i + \beta D_i + \gamma I_i + \varepsilon_i \tag{1}$$

G is set of variables, which describe geographical features of respondent. These include geographical position (e.g. region, where the respondent lives) and settlement size. We believe there may be certain regional differences in trust due to different mentality and economic development. Settlement size can have an effect because of differences in life experiences as well as differences in banking system penetration of different settlement types (e.g. inhabitants of big cities are more accustomed to a variety of banks around them)

D is a set of demographic variables, which describe personal characteristics of the respondent, such as age, gender, education, employment status, income etc. These variables provide some information about individuals' personality and experiences.

Banking operations are subject to a number of risks, primarily the possibility of the default of the bank. Consequently, individuals' trust in banks depends on their

risk aversion, which varies for different age groups, genders, levels of education and income (Arrondel, 1995).

Variable set *I* includes variables concerning preferred sources of information, financial outlook, personal regards. We use self-assessed financial awareness of individuals as a proxy for their factual awareness of current situation at financial markets.

As the sources of information vary in amount of financial information and its quality, individuals who prefer different sources of information will be differently informed. For example, radio usually presents listeners with short news issues, lacking professional analysis of financial news. At the same time, financial press provides readers with extensive and professional coverage of all relevant news. To capture this variation we use "prefers TV", "prefers radio", "prefers press" and "prefers internet" dummies. Due to its high policy relevance, trust in deposit insurance is of interest for us. Results on it would suggest whether further development of deposit insurance system can help to promote trust in banks.

Given the discrete and ordered nature of trust variables we estimate two specifications of the model for trust in public and private banks using ordered probit. Afterwards we construct a variable, which incorporates measures of trust in both types of banks and which is not of ordered nature. To estimate a model for this variable we use multinomial logit technique.

We report average marginal effects (AME) after the regressions. The choice of average marginal effects versus marginal effects at the mean (MEM) is based on discussion in Bartus (2004). The author's point is that MEM, which is provided by the statistical packages, is not always a good approximation of AME as: "the sample means used during the calculation of MEM might refer to either

nonexistent or inherently nonsensical observations; a problem typically encountered when there are dummies among the regressors".

We use data from a large scale survey on pension reform that was conducted by FINREP Ukraine in 2010. Face to face interviews were conducted with 2,007 adult-age respondents. While most questions were related to pension reforms, this survey also included a section on trust in financial institutions as well as questions concerning standard demographical information.

A sample size of 2,007 interviews provides sufficient responses for reliable statistical analysis by region, age, gender, educational level, and other categories. The key variables in our analysis are levels of trust in institutions. The respondents were asked to evaluate their trust in these institutions using the scale: "Fully trust", "rather trust", "rather not trust", "do not trust at all". The summary statistics is presented in Table 1.

Table 1. Levels of trust in institutions, %

	Fully trust	Rather trust	Rather do not trust	Do not trust at all	Difficult to answer
State owned banks	9.02	29.80	25.51	30.00	5.68
Private banks	1.84	14.80	32.93	45.29	5.13
Deposit Insurance Fund	1.84	10.96	24.36	32.39	30.44

While trust in both types of banks is our dependent variable, trust in deposit insurance fund is an explanatory variable of particular interest for us. The table indicates lack of trust in banking institutions in the sample. Less than 40% trust or rather trust state owned banks, while private banks are trusted by 16,64% of the sample. Approximately 5% have difficulties in evaluating their trust in banks.

As far as this category cannot be clearly interpreted we drop it in our estimation. Deposit insurance fund is not widely trusted too; moreover, 30% of respondents fail to answer the question about it. This indicates low public awareness of deposit insurance system. For the estimation purposes I combine the "fully trust" and "rather trust" categories of deposit insurance into one "high trust" dummy variable, as percentage of those, who trust is too small for statistical analysis.

We use a set of variables, representing geographical occupation of respondents. 6 regions are distinguished (Kyiv, Central, Eastern, Western, Northern and Southern) as well as 5 settlement sizes (village, cities with population up to 50k, 100k, 500k and higher than 500k). Summary statistics are provided in tables 2 and 3:

Table 2. Region distribution of respondents

Regions	% of respondents
Kyiv	6.43
Northern	11.11
Western	22.52
Central	11.76
Southern	15.25
Eastern	32.93

Table 3. Settlement size distribution of respondents

Type of settlement	% of respondents
Village	30.64
Population up to 50k	21.72
Population 50k-100k	7.32
Population 100k - 500k	17.99
Population over 500k	22.32

Table 2 suggests that most of the respondents come from Eastern and Western regions. Kyiv region is included in the analysis to capture specific conditions of the individuals in the capital of Ukraine. Due to its specificity we chose Kyiv as a base category.

As we see, most of the population of Ukraine resides in settlements with population smaller, than 50 thousand and more than 20% - in big cities (over 500 thousand). We use the latter as our base category for the empirical analysis.

Basic demographical information is also provided by the survey. In our analysis we use gender, age, education and professional occupation variables. Summary statistics of gender variable is provided in table 4:

Table 4. Gender distribution of respondents

Gender	% of respondents
Male	45.64
Female	54.36

Gender distribution is roughly in line with that of the population in Ukraine – in our sample we have slightly more women than men.

Age variable is the only non-categorical variable in the dataset. Descriptive statistics is provided in Table 5. To allow for nonlinearities we will include also squared age as another regressor.

Table 5. Descriptive statistics of age variable

Number of obs.	2007
Mean	41.77927
Std. Dev.	17.67214
Min	18
Max	89

As the survey was mainly aimed to capture the perceptions of the pension reform by its target group – individuals of 18-35 years old, this group is slightly

overrepresented in the survey. To take this into account we apply weights to mitigate this problem and to make survey representative.

The survey has 7 education categories: no elementary education, incomplete secondary education, basic secondary education, full secondary education, basic higher education, unfinished higher education, higher education. As far as some these categories represent small numbers of respondents, they were grouped in 3 major categories for the purpose of estimation. Final categorization is provided in Table 6:

Table 6. Education categories.

Education	% of respondents
Basic secondary education or lower	11.71
Full secondary education or basic higher education	55.26
Receiving or have received higher education	33.03

People are also divided into categories by their employment status (which is called "professional occupation" in the questionnaire). Employment statistics is provided in Table 7:

Table 7. Employment status distribution
of respondents

Status	% of respondents
Employee	44.79
Self-employed	5.83
Unemployed	11.46
Pensioner	23.92
Houskeeper	5.53
Student	8.47

Table 7 suggests, that roughly a half of the sample is currently employed or self-employed, while almost a quarter receives pension. The percentage of the unemployed is higher than the official level, possibly due to sample peculiarities, which was taken in post-crisis period and unregistered unemployment.

Respondents were asked to assess their income level according to groups of goods they were able to buy. Initially, the sample presented 6 groups according to income level and a group of those, who refused to answer. We aggregated these as follows:

Table 8. Income categories of respondents

Income category	% of respondents
Have to economize on clothes or food	33.23
Sufficient money to buy food and necessary clothes, footwear. Have to save or borrow for such purchases as a good suit, a vacuum cleaner etc	37.87
Income, sufficient at least to buy food, clothes, footwear, and some more expensive purchases.	26.36
Difficult to answer	2.54

About third of the sample is unable to buy food or clothing, while roughly a quarter has income, sufficient for fair living. The group of respondents, who had difficulties in answering this question, will be dropped in empirical analysis, since its interpretation is unclear and the share is rather small so it will not lead to selection bias. To simplify notation we will further refer to three income groups as "low income", "medium income" and "high income".

The survey presents indicators of financial awareness of the respondent, which is represented by the question: "How could you estimate your awareness of financial market operations?" As it is seen from table 2, the majority of respondents do not highly evaluate their financial awareness.

Table 9. Financial awareness of respondents

Fin. Awareness category	% of respondents
Better than most citizens	2.84
Same as that of most citizens	46.29
Worse than that of most citizens	37.62
Unable to answer	13.25

As far as the "better than most citizens" category is of small size, we group it with the "same as that of most citizens" to create one "Fin. Aware" category.
Respondents were asked a multiple-choice question about preferable sources of information on financial markets. We see this information as relevant since sources of information may differ in coverage of events, deepness of analysis, professionalism. Answers of individuals are summarized in table 9.

Table 10. Sources of information

Source of information	% of respondents
Television	30.3
Radio	5.5
Press	8.4
Internet	7.9
Do not get financial information from these sources	61.29

From table 9 it can be inferred, that less than 40% of Ukraine's population follow financial news, with the majority of them preferring TV. This is consistent with low financial awareness, discussed above.

EMPIRICAL RESULTS

To estimate the relationship between trust in banks and respondents' characteristics we run two simple ordered probit regressions. In the first we analyze trust in private owned banks and in the second – trust in state owned banks. Statistically significant relationships are provided in Tables 11 and 12. All results are available in Appendix.

Evidence from Table 11 suggests that individuals in all regions (compared to Kyiv, which is the base category) are less likely not to trust in private banks, but more likely to "rather not trust", "rather trust" and fully trust. Comparison of results between regions shows that inhabitants of eastern and southern regions are the most likely to trust in private owned banks, and least likely not to trust. Inhabitants of northern region are the least trusting: probability of fully trusting and rather trusting is the lowest. Intuitive explanation of these findings is that people, who live in economically developed regions, tend to trust banks more.

The only significant result, concerning settlement size is the effect of living in the village. Compared to the base category (cities with population over 500 thousand) villager shows 8.6 percentage points higher probability of not trusting in banks, but 6.9 p.p. lower probability of rather not trusting. This may be due to low acquaintance of villagers with banks and their services.

Demographical variables such as age and gender seem to only slightly affect the probability of trusting. Men are more likely not to trust banks than women. This result contradicts common findings (e.g. Joop et al. 2002) that women are more

risk-averse than men. Age also marginally contributes only to probability of "rather trusting": a discrete change in age variable decreases probability of "rather trust" response by 0.3 p.p. This result is in line with intuition about elderly people, who experienced losses of their deposits in the beginning of 90s and became more risk-averse. No nonlinearities were detected in the effect of age. Educational groups do not differ significantly in their perception of private banks, neither do most of the employment groups. The only significant result concerns housekeepers, who are 8 p.p. less likely to distrust banks and are slightly more likely to belong to three other categories. Higher income doesn't significantly matter for the question of trust, while low income increases chances of not trusting private banks by 4.6 p.p.

Individuals' self-assessment of their financial awareness matters in their perception of private banks. Those, who think that they are at least as financially aware as others are 4.2 p.p. less likely not to trust in private banks, but 2.9 p.p. more likely to "rather not trust". This result is important from policy perspective since raising financial awareness and literacy of population may increase trust.

Preferences over sources of financial information determine individuals' trust to some extent. Listeners of radio are 8.1 p.p. more likely not to trust in banks, while being marginally less likely to trust or rather trust. On the contrary, if a person reads financial press or uses internet to access financial information, she is less likely not to trust private banks (10.9 p.p. and 6.7 p.p. respectively), while being more likely to "rather not trust" or "rather trust". In the light of discussion of these variables in the previous chapter, the results show that access to extensive information of higher quality is important for promotion of trust in private banks.

Table 11. Significant marginal effects for the privately owned banks.

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Northern region	-0.217[1]***	0.137***	0.050***	0.003***
	-2.8	2.99	2.99	2.98
Western region	-0.289***	0.180***	0.066***	0.005***
	-4.01	4.19	4.17	4.16
Central region	-0.268***	0.167***	0.061***	0.004***
	-3.44	3.63	3.62	3.61
Southern region	-0.349***	0.176***	0.124***	0.019***
	-5.05	5.11	5.07	5.04
Eastern region	-0.310***	0.146***	0.113***	0.020***
	-4.69	4.75	4.71	4.68
Village	0.086***	-0.069***	-0.025***	-0.002***
	3.49	-3.09	-3.09	-3.09
Male	0.030*	-0.022	-0.007	0
	1.66	-1.6	-1.6	-1.6
Age	0.006	-0.002	-0.003**	-0.001
	1.47	-0.41	-2.13	-0.6
Housekeeper	-0.080*	0.054*	0.020*	0.001*
	-1.74	1.83	1.83	1.83
Fin. Aware	-0.042*	0.029*	0.012*	0.001*
	-1.71	1.76	1.76	1.76
Sources of inf.: radio	0.081**	-0.064**	-0.023**	-0.002**
	2.31	-2.07	-2.07	-2.07
Sources of inf.: press	-0.109***	0.073***	0.027***	0.002***
	-2.95	3.14	3.14	3.14
Sources of inf.: Internet	-0.067*	0.045*	0.017*	0.001*
	-1.68	1.76	1.76	1.76

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[1] Numbers in the table are marginal effects after ordered probit regression. t-statistics is reported below in same cells. * means significant at 10%, ** - at 5%, * - at 1%. Omitted categories are Kyiv region, cities larger than 500k, PTU education, employees and self-employed, not trust or rather not trust in deposit insurance, medium income.

Table 11. Significant marginal effects for the privately owned banks - continued

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
High trust in deposit insurance	-0.280*** -8.19	0.175*** 8.58	0.064*** 8.58	0.004*** 8.57
Low income	0.046** 2.14	-0.035** -2.03	-0.013** -2.03	-0.001** -2.03
R sq. Adj	0.0708			
Number of obs.	1627			

Table 11 suggests also that trust in deposit insurance does matter for trust in private banks: those who rely on deposit insurance, are 28 p.p. less likely not to trust in banks and 3.5 p.p. more likely to "rather trust".

Evidence from analysis of trust in state owned banks (Table 12) is slightly different. Regional differences have lower effect on public banks, than on private: northern and eastern regions have lower significance levels, while coefficients of central region are insignificant. Nevertheless, eastern and southern regions are still the most trusting.

Concerning settlement size, estimation results show, that base category (cities with population higher than 500 thousand) is the most trusting category of individuals. Villagers have common perception of private and public banks: compared to base category, they are 10.2 p.p. more likely not to trust in public banks and less likely to trust or rather trust (6.1 p.p. and 1.8 p.p. respectively). Individuals, living in cities with population of 50,000-100,000 are the least trusting in the sample: the probability of not trusting is 13.8 p.p. higher, than such probability for base category. The result for cities of 100,000-500,000 has low effect, nevertheless members of this category are less likely to trust and more likely not to trust in public banks than inhabitants of big cities.

The effect of financial awareness has higher magnitude and significance level for public banks than for private. Individuals, who deem themselves to be at least as aware as the majority of population, have 8p.p. lower chances of not trusting in private banks as well as 4.9 p.p. and 1.7 p.p. higher probability to rather trust or fully trust.

As in case of private banks, most of the employment/occupation variables are found insignificant. "Students" category is an exception: they are found to have higher probability of trusting or rather trusting (1.5 p.p. and 4.8 p.p. respectively) compared to employees and self-employed persons.

Press is found to be the only source of information, which significantly affects trust. The sign of the effect is the same as in case of private banks, but the magnitudes are different: readers of press are 5 p.p. more likely to rather trust and 8.3 p.p. less likely not to trust.

Trust in deposit insurance has higher effect on trust in state owned banks, than it has on trust in private banks. A person, who puts her faith in deposit insurance, is 24.1 p.p. less likely not to trust, 15.5 p.p. more likely to rather trust and 4.7 p.p. more likely to fully trust in state owned banks.

Table 12. Significant marginal effects for the state-owned banks.

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Northern region	-0.131[2]**	0.030*	0.080*	0.024*
	-2.04	1.96	1.95	1.95
Western region	-0.113*	0.026*	0.068*	0.021*
	-1.83	1.77	1.77	1.77
Southern region	-0.221***	0.021***	0.136***	0.065***
	-4.16	3.72	3.65	3.63
Eastern region	-0.251***	-0.002***	0.147***	0.097***
	-5.58	-3.07	4.67	4.63
Village	0.102***	-0.023***	-0.061***	-0.018***
	2.65	-2.61	-2.61	-2.61
City 50k-100k	0.138***	-0.032***	-0.083***	-0.025***
	3.12	-3.01	-3.01	-3.01
City 100k-500k	0.073*	-0.016*	-0.043*	-0.013*
	1.87	-1.86	-1.86	-1.86
Student	-0.080*	0.018*	0.048*	0.015*
	-1.73	1.71	1.7	1.7
Fin. Aware	-0.080***	0.014***	0.049***	0.017***
	-3.16	3.1	3.1	3.1
Sources of inf.: press	-0.083**	0.019**	0.050**	0.015**
	-2.37	2.32	2.32	2.33
High trust in deposit insurance	-0.241***	0.059***	0.155***	0.047***
	-10.21	8.73	8.74	8.74
R sq. adj.	0.0512			

[2] Numbers in the table are marginal effects after ordered probit regression. t-statistics is reported below in the same cells. * means significant at 10%, ** - at 5%, * - at 10%. Omitted categories are Kyiv region, cities larger than 500k, PTU education, employees and self-employed, not trust or rather not trust in deposit insurance, medium income.

N	1620

 The results, provided by the previous analysis are conclusive. To check their robustness we employ another specification, which allows for a direct comparison of different levels of trust. From Table 12 it is seen that 82% of all, who trust private banks, also trust public banks. At the same time, 94% of those, who do not trust in public banks, also do not trust private banks.

Table 13 Two-way plot of trust in public and private banks

	Do not trust in public banks[3]	Trust in public banks	Total
Do not trust in private banks	1,054[4]	471	1,525
	69.11%	30.89%	100%
	94.87%	63.31%	82.21%
Trust in private banks	57	273	330
	17.27%	82.73%	100%
	5.13%	36.69%	17.79%
Total	1,111	744	1,855
	59.89%	40.11%	100%
	100%	100%	100%

Table 12 suggests, that there is a strong relationship between trust in privately owned and state-owned banks. Such relationship may determine trust behavior in to a greater extent, than personal and social features, discussed above. The roots of this link may lie in the fact, that some people are generally more trusting, than others. In this case it is hard to determine the effect of this "overall trust in banks" and separate it from effects of our dependent variables. To further

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[3] Here and further to simplify notation, the term "trust" means "trust or rather trust" and the term "not trust" means "do not trust or rather not trust"

[4] First numbers in the cells are numbers of individuals in the sample, belonging to specific category. Second and third numbers are percentages of respondents, belonging to specific category.

investigate the determinants of trust we construct a categorical variable "overall trust in banks", which will consist of 4 categories: "Trust in both private and public banks", "Trust only in public banks", "Trust only in private banks", "Trust in neither private nor public banks". Statistic description of the variable is provided in Table 13:

Table 14. Descriprtion of "overall trust" variable.

	Trust in both private and public banks	Trust only in public banks	Trust only in private banks	Trust in neither private nor public banks
Overall trust	14.41%	26.72%	3.22%	55.65%

As it is apparent from the table, that the majority of individuals either trusts both types of banks, or trusts neither. A significant amount of respondents trusts only private banks, while only 3.22% trusts in private banks, but doesn't trust public banks. Further analysis of this variable can shed light on both the determinants of "overall trust in banks" and determinants of trust in specific type of banks.

To analyze the determinants of categorization in constructed variable we employ a multinomial logit model. The statistically significant results are provided in Table 14, while total output is available in the Appendix:

Table 15. Significant marginal effects for "overall trust" regression.

Coefficient	Trust both	Trust public	Trust private	Trust neither
Northern region	0.007[5]	0.091*	0.003	-0.102*
	0.27	1.76	0.67	-1.77
Southern region	0.032	0.179***	0.007	-0.216***
	0.9	3.06	0.93	-3.44
Eastern region	0.067	0.175***	0.001	-0.245***
	1.37	3.07	0.21	-3.9
Village	0.023	-0.077***	0.001	0.057*
	1.41	-2.64	0.46	1.76
City 50k-100k	0.013	-0.071*	0.002	0.056
	0.74	-1.91	0.91	1.34
High education	-0.001	-0.031	0.003**	0.029
	-0.2	-1.6	1.97	1.35
Fin. Aware	0.013	0.047**	0	-0.060***
	1.32	2.33	0.09	-2.64
Sources of inf.: radio	-0.018**	-0.023	-0.123***	0.165***
	-2.11	-0.62	-90.19	3.98
Sources of inf.: press	0.019	0.055*	0	-0.072**
	1.12	1.88	0.01	-2.14
High trust in deposit insurance	0.170***	0.201***	0.007***	-0.288***
	5.45	7.16	4.08	-8.8
R sq. Adj	0.1064			
N	1620			

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[5] Numbers in the table are marginal effects after multinomial logit regression. Standard errors are reported below in the same cells. * means significance at 10%, ** - significance at 5%, * - at 10%. Omitted categories are Kyiv region, cities larger than 500k, PTU education, employees or self-employed, not trust or rather not trust in deposit insurance, medium income. Reference category is "trust neither"

Results of this regression once more imply that regional differences in perception of banks matter. Living in eastern, southern and northern regions increases relative probability of trusting in public banks, compared to trusting in no banks by 17.9 p.p, 17.5 p.p. and 9.1 p.p. respectively. Inhabitants of villages and small cities are less likely to trust public banks, than to trust no banks.

While gender and age show no significant effect on trust, individuals having higher education are 0.3 p.p. more likely to trust private banks, than to trust neither. Employment status and income levels have no significant effect on relative probabilities of trusting in any of the banks.

In line with previous findings, financial awareness increases relative probability of trusting public banks by 4.7 p.p., while listening to radio decreases relative probabilities of trusting in both types of banks and trusting in private banks. Readers of press, on the contrary, are 5.5 p.p. more likely to trust in public banks, than to trust neither.

Results for trust in deposit insurance are not surprising: relative probability of trusting both banks as well as probabilities of trusting private or public are positive. Marginal effect for public banks is of the biggest magnitude – 20 p.p., possibly because it captured the effect of overall trust in government institutions.

Analysis of results of the last regression generally supports the results, obtained earlier. Geographical differences, as well as financial awareness, quality of financial information and trust in deposit insurance matter. Results for age, gender, employment status and income from previous regressions are not robust to this specification of the model.

Chapter 5

CONCLUSIONS

In this study we evaluated which characteristics of individuals affect their trust in banks. We find that some of such characteristics are equally important for trust in privately owned and state owned banks, while some others apply only to one type of banks.

Regional differences affect trust in both public and private banks: people living in Eastern and Southern regions are the most likely to trust in both types of banks. Villagers show high distrust in both types of banks, while people living in small cities exhibit distrust only in public banks.

Socio-demographic variables significantly affect only trust in private banks in one of the model specifications: males and elder people are marginally more likely not to trust. Employment status affects trust: housekeepers tend to trust private banks and students tend to trust public banks. Unemployed people and pensioners don't differ from the reference group (employees and self-employed) in their perception of banks. Individuals with low income tend to trust less in private banks, while no effect of high income is found.

Financial awareness of individuals seems to be positively related to their trust in both types of banks. This result presents obvious policy implications: to increase trust in banks, the policy-makers should take measures to improve financial awareness of society. Individuals, who differ in sources of their financial information, differ also in their trust in banks. Radio listeners consistently tend to trust less, while readers of financial press trust more.

Another result, which presents policy importance, is the impact of trust in deposit insurance on trust in banks. Those respondents who exhibit high trust in deposit insurance, are consistently the most likely to trust banks. Taking into account, that more than 30% of respondents were unable to answer the question about deposit insurance fund, the government should increase public awareness of activities of this institution.

As further extensions of this topic we suggest model specifications, accounting for presence of foreign capital in the bank and investigation of relationship between use of banking products and trust in banks.

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APPENDIX.

Regression results

Table A1. Marginal effects for the privately owned banks.

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Northern region	-0.217***	0.137***	0.050***	0.003***
	-2.8	2.99	2.99	2.98
Western region	-0.289***	0.180***	0.066***	0.005***
	-4.01	4.19	4.17	4.16
Central region	-0.268***	0.167***	0.061***	0.004***
	-3.44	3.63	3.62	3.61
Southern region	-0.349***	0.176***	0.124***	0.019***
	-5.05	5.11	5.07	5.04
Eastern region	-0.310***	0.146***	0.113***	0.020***
	-4.69	4.75	4.71	4.68
Village	0.086***	-0.069***	-0.025***	-0.002***
	3.49	-3.09	-3.09	-3.09
City up to 50k	0.031	-0.023	-0.008	-0.001
	1.12	-1.08	-1.08	-1.08
City 50k-100k	0.057	-0.044	-0.016	-0.001
	1.59	-1.48	-1.48	-1.48
City 100k-500k	0.025	-0.019	-0.007	0
	0.82	-0.8	-0.8	-0.8
Male	0.030*	-0.022	-0.007	0
	1.66	-1.6	-1.6	-1.6
Age	0.006	-0.002	-0.003**	-0.001
	1.47	-0.41	-2.13	-0.6
Age squared	0	0	0	0
	-0.75	0.34	1.07	0.66
Low education	0.026	-0.019	-0.006	0
	0.8	-0.78	-0.78	-0.78
High education	0.019	-0.014	-0.005	0
	0.89	-0.87	-0.87	-0.87

Table A1. Marginal effects for the privately owned banks - continued

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Unemployed	0.017	-0.013	-0.005	0
	0.46	-0.45	-0.45	-0.45
Pensioner	0.015	-0.011	-0.004	0
	0.44	-0.43	-0.43	-0.43
Sources of inf.: TV	-0.009	0.007	0.002	0
	-0.4	0.4	0.4	0.4
Sources of inf.: radio	0.081**	-0.064**	-0.023**	-0.002**
	2.31	-2.07	-2.07	-2.07
Sources of inf.: press	-0.109***	0.073***	0.027***	0.002***
	-2.95	3.14	3.14	3.14
Sources of inf.: internet	-0.067*	0.045*	0.017*	0.001*
	-1.68	1.76	1.76	1.76
High trust in deposit insurance	-0.280***	0.175***	0.064***	0.004***
	-8.19	8.58	8.58	8.57
Low income	0.046**	-0.035**	-0.013**	-0.001**
	2.14	-2.03	-2.03	-2.03
High income	-0.001	0.001	0	0
	-0.04	0.04	0.04	0.04
R sq. Adj	0.0708			
N	1627			

Table A2. Marginal effects of state owned banks

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Northern region	-0.131**	0.030*	0.080*	0.024*
	-2.04	1.96	1.95	1.95
Western region	-0.113*	0.026*	0.068*	0.021*
	-1.83	1.77	1.77	1.77
Central region	-0.099	0.023	0.059	0.018
	-1.48	1.45	1.45	1.45
Southern region	-0.221***	0.021***	0.136***	0.065***
	-4.16	3.72	3.65	3.63
Eastern region	-0.251***	-0.002***	0.147***	0.097***
	-5.58	-3.07	4.67	4.63
Village	0.102***	-0.023***	-0.061***	-0.018***
	2.65	-2.61	-2.61	-2.61
City up to 50k	-0.033	0.008	0.02	0.006
	-0.86	0.86	0.86	0.86
City 50k-100k	0.138***	-0.032***	-0.083***	-0.025***
	3.12	-3.01	-3.01	-3.01
City 100k-500k	0.073*	-0.016*	-0.043*	-0.013*
	1.87	-1.86	-1.86	-1.86
Male	-0.016	0.003	0.009	0.003
	-0.67	0.67	0.67	0.67
Age	-0.001	0	0	0
	-0.22	-0.07	0.22	0.16
Age squared	0	0	0	0
	0.38	0.08	-0.4	-0.25
Low education	0.024	-0.006	-0.014	-0.004
	0.58	-0.58	-0.58	-0.58
High education	0.03	-0.007	-0.017	-0.005
	1.13	-1.13	-1.13	-1.13
Unemployed	0.046	-0.011	-0.027	-0.008
	1.11	-1.11	-1.11	-1.11
Pensioner	0.05	-0.013	-0.029	-0.008
	1.14	-1.13	-1.13	-1.13

Table A2. Marginal effects of state owned banks - continued

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Housekeeper	-0.066	0.015	0.04	0.012
	-1.36	1.34	1.34	1.34
Student	-0.080*	0.018*	0.048*	0.015*
	-1.73	1.71	1.7	1.7
Sources of inf.: radio	0.027	-0.006	-0.016	-0.005
	0.59	-0.59	-0.59	-0.59
Sources of inf.: press	-0.083**	0.019**	0.050**	0.015**
	-2.37	2.32	2.32	2.33
Sources of inf.: internet	0.012	-0.003	-0.007	-0.002
	0.3	-0.3	-0.3	-0.3
High trust in deposit insurance	-0.241***	0.059***	0.155***	0.047***
	-10.21	8.73	8.74	8.74
Low income	0.037	-0.008	-0.022	-0.007
	1.33	-1.33	-1.33	-1.33
High income	-0.021	0.004	0.013	0.004
	-0.73	0.73	0.73	0.73
R sq. Adj	0.0512			
N	1620			

Table A3. Marginal effects for "overall trust" regression

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Northern region	0.007	0.091*	0.003	-0.102*
	0.27	1.76	0.67	-1.77
Western region	0.004	0.06	0.006	-0.07
	0.17	1.21	1.21	-1.27
Central region	0.003	0.07	0.005	-0.079
	0.13	1.31	1.12	-1.33
Southern region	0.032	0.179***	0.007	-0.216***
	0.9	3.06	0.93	-3.44
Eastern region	0.067	0.175***	0.001	-0.245***
	1.37	3.07	0.21	-3.9
Village	0.023	-0.077***	0.001	0.057*
	1.41	-2.64	0.46	1.76
City up to 50k	0.01	0.012	0	-0.021
	0.79	0.43	-0.03	-0.65
City 50k-100k	0.013	-0.071*	0.002	0.056
	0.74	-1.91	0.91	1.34
City 100k-500k	0.025	-0.027	0.003	0.005
	1.47	-0.93	1.21	0.14
Male	0.001	0.016	0	-0.017
	0.2	0.85	0.09	-0.85
Age	0	0.002	0	-0.002
	-0.26	0.74	-0.22	-0.56
Age squared	0	0	0	0
	-0.29	-0.45	0.04	0.51
Low education	-0.002	-0.037	-0.001	0.041
	-0.21	-1.28	-0.62	1.29
High education	-0.001	-0.031	0.003**	0.029
	-0.2	-1.6	1.97	1.35
Unemployed	-0.003	-0.033	0.002	0.034
	-0.3	-1.1	0.88	1.02
Pensioner	-0.005	-0.012	0.001	0.016

| | -0.51 | -0.39 | 0.44 | 0.47 |

Table A3. Marginal effects for "overall trust" regression - continued

Coefficient	Do not trust	Rather not trust	Rather trust	Fully trust
Housekeeper	0.028	0.05	0.002	-0.073*
	1.39	1.3	0.71	-1.72
Student	0.021	0.045	0.001	-0.063
	1.18	1.08	0.64	-1.39
Fin. Aware	0.013	0.047**	0	-0.060***
	1.32	2.33	0.09	-2.64
Sources of inf.: TV	0.002	-0.024	-0.001	0.023
	0.27	-1.21	-0.48	1.03
Sources of inf.: radio	-0.018**	-0.023	-0.123***	0.165***
	-2.11	-0.62	-90.19	3.98
Sources of inf.: press	0.019	0.055*	0	-0.072**
	1.12	1.88	0.01	-2.14
Sources of inf.: internet	0.008	-0.012	0.002	0.002
	0.65	-0.36	0.81	0.06
High trust in deposit insurance	0.170***	0.201***	0.007***	-0.288***
	5.45	7.16	4.08	-8.8
Low income	-0.01	-0.02	0.001	0.029
	-1.59	-0.94	1	1.27
High income	0.01	0.021	0.001	-0.031
	1.09	0.93	0.54	-1.25
R sq. Adj	0.1064			
N	1620			