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EFFECTS OF SETTING DEPOSIT INSURANCE ON DEPOSITORS TRUST IN IRANIAN BANKING SYSTEM

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ABSTRACT

Deposits Insurance Fund regulation was approved by the council of ministers of Islamic republic of Iran about five years ago on 2012. However, it has not been fully implemented by the Iranian banking sector, yet. Hence, as there might be some concerns regarding to the new regulation, in this paper authors investigate whether this new regulation affects Iranian depositors' trust in banking system. The contribution of this paper is to use micro level data, for the first time, in order to analyze the impact of Implementation of Deposit Insurance on Iranian Banking System. In this research, authors use a questionnaire, which contains questions about personal information and depositors' opinion about banks and safety of deposits. Questions adapted from a Prean and Stix (2011) study "effect of raising deposit insurance coverage in times of financial crisis in Croatia". Questioners were distributed between two groups of Tehran's depositors. First group consists of those who were not aware about the deposit insurance implementation. Second group informed about the implementation of deposit insurance regulation. Results of this study are somehow consistent with previous studies about effects of Deposit Insurance on Iranian banking system. Findings show introducing deposit insurance, decreases depositors' trust to the safety of deposits in Iran. Hence, all aspects of implementing of deposit insurance fund must be considered by the Central Bank I.R. of Iran.

Keywords: *Deposit insurance, Iranian banking system, Depositors' trust, Probit Model*
JEL: G21, G22, E50.

INTRODUCTION

Banks play an important intermediary role between depositors and borrowers. Hence, banks are mainly relying on deposits in order to be able to lend money to the investors. However, in some specific conditions, such as financial crisis, depositors may convince that their deposits in banks are not safe. Consequently, they may withdraw their deposit, which imposes high pressures on banking system. As they rely on customer's deposits and in return, they may withdraw their money without any prior notice, banks will encounter with financial shocks and crisis. Banking system failure is type of systematic risk and has the potential to trigger a broad spectrum of harmful events, including economic recessions. Hence, policy makers introduce deposit insurance schemes to protect depositors and to give them peace of mind that their money is not at risk.

A Deposit Insurance System (DIS) follows the specific aim to protect small depositors in the domestic safety net. DIS can also enhance financial system stability when it funded adequately and when other safe guards, such as a strong bank supervisory program, are in place.

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Although there are various critical standards to ensure the effectiveness of deposit protection schemes, these are not sufficient assure stability of the system, because deposit insurance is only one component, though crucial, of the financial safety net that exist in most countries, particularly developed ones (De Cesare, 2005). An effective DIS is an important pillar of the financial safety net and plays a key role in contributing to the stability of the financial system and the protection of depositors (Micajkova, 2013).

Considering positive effects of establishing DIS, the statute of Deposits Guarantee Fund was approved by the Iranian's Council of Ministers on 12th of August 2012. Some of the responsibilities and authorities of the Deposit Guarantee Fund are as follows:

a) Guarantee deposits per person including local and foreign currency deposits in any credit institution except in accordance with article 6 of the statute,
b) Dues received from credit institutions,
c) Deposits paid after the declaration of the Emergency Committee.

Based on the previous studies, in the presence of deposit insurance, increasing the level of deposit insured can increase depositor's trust in the banking system. However, deposit insurance implementation has no history in Iran and it seems that depositors traditionally believe that if Iranian banks fail, their deposits are safe and guaranteed by the Central Bank of Iran. Hence, the effects of introducing deposit insurance on depositors' reaction is ambiguous, as they may consider introducing it as a signal, that central bank of Iran is less responsible for their deposits now.

After the adopting of the statute and before its implementation, we have decided to examine the impact of deposit insurance. Hence, in this paper, we will try to investigate whether introducing deposit insurance in Iranian banking system increases the trust of private agents or cause more uncertainty in an environment that several banks are private, which may increases considerations regarding to their bankruptcy.

LITERATURE REVIEW

Hutchison and McDill (1999) utilized a dummy variable representing explicit deposit insurance along with a number of variables capturing the state of economies to explain the occurrence of banking crises in countries. They find that the existence of an explicit deposit insurance scheme increases the probability of banking crises by approximately 50 percent within a sample of 65 crisis episodes during the period 1975-1997.

Gropp and Vesala (2004) analyzed the relationship between deposit insurance, debt-holder monitoring, and risk taking. In a stylized banking model, they show that deposit insurance may reduce moral hazard, if deposit insurance credibly leaves out non-deposit creditors. Testing the model using EU bank level data yields evidence consistent with the model, suggesting that explicit deposit insurance may serve as a commitment device to limit the safety net and permit monitoring by uninsured subordinated debt holders. They further find that credible limits to the safety net reduce risk taking of smaller banks with low charter values and sizeable subordinated debt shares only. However, they also find that the introduction of explicit deposit insurance tends to increase the share of insured deposits in banks' liabilities.

Within a sample of 29 developed and developing countries during the period 1994-2001, Hoggarth, et al. (2005) cannot find a significant general relationship between an explicit

deposit insurance dummy and the probability of crises. However, when distinguishing between limited and unlimited deposit insurance coverage, they find that systems with limited coverage are strongly associated with smaller probability of crises.

According to Bakhoda (2009) In order to achieve banking stability, some countries have established a deposit insurance system. However, this system is relatively complex mechanism. The study tries identify the impact of explicit deposit on banking crises by using a multivariate logit model based on the evidence of 23 developing countries (including Iran) in 1980 – 2002 period. The results reveal that explicit deposit insurance tends to increase the likelihood of banking crises.

Prean and Stix (2011) studied the effects of raising deposit insurance coverage in times of financial crisis in Croatia. Faced with rising deposit outflows in October 2008, many transition countries forced to extend the limits of deposit insurance coverage. Has deposit insurance increased the trust of private agents or caused more uncertainty? They analyze these questions by employing household survey data for Croatia from exactly the time deposit insurance extended. First, they provide evidence how the financial crisis has affected trust in banks and trust in the local currency. Then, they show that the increase in deposit insurance coverage had an immediate and positive impact on how people perceived the safety of deposits and the credibility of the local currency. Therefore, their results suggest that this policy measure helped to prevent a more serious and dangerous meltdown of deposits and a further shift towards foreign currency denominated assets. However, despite this effect the perceived safety of deposits remained lower than it was before the financial crisis. They also consider this finding to be of relevance for other countries of Central, Eastern and Southeastern Europe.

Vali (2011) using Diamond-Dybvig analytical framework for Iranian banking system and concludes that implementation of Deposit Insurance System cannot prevent financial crisis, However, it can postpone financial crisis.

Jamjittrong and Jantarakolica (2012) investigated the potential impacts of the Deposit Protection Agency Act on the big individual depositor's behavior. Using SUR and GLLAMM with questionnaire survey to collect data from 217 Thai depositors, the results suggest that a lower protection of one million baht under the new law will have a negative influence on savings preference of the typical big depositors.

Kiss et al. (2012*)* evaluated the effects of deposit insurance on the emergence of bank runs by means of a controlled laboratory experiment. They considered three depositors in a line of a common bank. Depositors decide in sequence between withdrawing and keeping their money deposited. They have three different treatments in which depositors who keep the money have full insurance, are partially insured, or not insured at all in case of a bank run. They find that, different levels of deposit insurance and the possibility of observing other depositors' actions reduce the likelihood of bank runs.

Enkhbold (2013) used a panel database of 401 banks in 31 Asian countries over the period of 2000 to 2010 to examine the effects of deposit insurance on banks' risk-taking incentives. They find that risk-taking incentives vary with bank size and risks. In addition, differentiated premiums may not accurately reflect the level of risk that a bank poses. In the presence of a deposit insurance scheme, the pattern of the non-linear relationship between bank size and risk-taking significantly changes. Their results suggest that market discipline exercised by banks is stronger in the presence of mandatory deposit insurance scheme. Government-funded

deposit insurance funds allow Asian banks to take a higher risk. A risk-based deposit insurance scheme functions more effectively in the countries with good regulatory framework and institutional quality.

Askari (2017) considers deposit withdrawals as a reason for liquidity risk, which may cause a bank, get bankrupt which in return can cause financial crisis. Hence, deposit insurance can used to reduce above-mentioned problems. Results show implementing Deposit Insurance without structural changes in banking system and approving new regulations, may cause some problems in Iranian banking system.

Tofighi (2017) examined the relationship between Deposit Insurance and bank's resistance in Iran, using panel data over the period (1394-1389) Including 12 private bank. Results indicate a significant negative relationship between deposit insurance and bank resistance standards, which means an increase in the deposit insurance rate can be interpreted as a sign of banking crises.

DATA AND MODEL

In order to investigate the effects of setting deposit insurance on Iranian banking system, authors utilize questionnaire, which contains questions on personal information and depositors' opinion regarding banks and safety of deposits. Questions and questionnaire adapted from Prean, Stix, (2011).

We have collected data from two groups of people. First group was depositors who were not aware of setting deposit insurance in Iranian banking system. For the second group we explained about the new regulation and definition of deposit insurance. Therefore, they answered questions by informing that deposit insurance will be set in banks in the near future. The sample consists of about 300 respondents. The questioners distributed between June 29 and September 25, 2016 in Tehran.

Questionnaires contains of important variables such as the safety of deposit by depositor perception, preference of depositors among gold or other liquid assets, depositor's investments in banks or their willingness to deposit in banks. The dependent variable is the perceived safety of deposits in the banking system. The crucial question is how much trust, people may have regarding the safety of deposits and this factor may depend on how much people trust, either other people or institutions, in general.

Using Prean, Stix, (2011) study, the first step is the definition of variables:

Perceived safety of deposits:

Currently, depositing money in banks is very safe (scale From 1 (strongly agree) to 6 (strongly disagree)). Dummy variable defined as one for answer categories 1–3.

Awareness:

Dummy variable defined as one if the interviewee informed on setting deposit insurance in Iranian banking system.

Age: Interviewee age between 20 and 68.

Gender: dummy variable, 1 for male and zero for female.

Occupation: dummy variable, 1 for governmental jobs and zero for private sector and self employed.

Income: Net household income ("less than 10 million Rials", "10 to 30 million Rials", "30 to 50 million Rials", "more than 50 million Rials")
Financial Situation: Currently, my financial situation is …." scale from 1 (I have been bankrupt) to 6 (very good)). Linear variable, missing observations excluded.
Education: Number of education years.
Household Head: a dummy variable, which equals one if respondent is household head, and zero for otherwise.
Expect Depreciation "what are your expectations on the future of exchange rate -the Rial versus Dollar- over the next year?"Dummy variable on answer category "the local currency will depreciate versus the dollar" (reference category: "will stay the same"/"will appreciate versus dollar").
Inflation Expectation Consent to the statement "in the next 12 months, prices in Iran will rise more rapidly than in the past years" (scale from 1 (strongly disagree) to 6 (strongly agree)).
Foreign Exchange Dummy variable defined as one if the respondent stated that holding dollar or any other foreign currency is appropriate form of saving.

Descriptive Statistics

Min	Max	Count	Mean	SD
Perceived safety of deposits		300	0.58	0.4943
0	1			
Awareness		300	0.50	0.5008
0	1			
Age		300	39.51	10.5752
20	68			
Income		300	0.23	0.4257
0	1			
Financial Situation		300	3.29	1.1150
1	6			
Education		300	16.323	2.9576
12	24			
Household Head		300	0.74	0.4393
0	1			
Expect Depreciation		300	0.533	0.4997
0	1			
Inflation Expectation		300	0.613	0.4877
0	1			
Foreign Currency		300	0.296	0.4575
0	1			

Sample restricted to respondents aged 20 or older.

First, we examined the validity of the questionnaire with the help of *Cronbach's Alpha*. Since a questionnaire with some questions (like *Likert* range of five options) is such a test, we can find the reliability of our questionnaire with the help of *Cronbach's Alpha*:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k} {s_i}^2}{s^2}\right) \qquad (1-1)$$

which k is the number of questions, s_i^2 is the variance of each question and s^2 is the variance of the questions.

If the alpha coefficient is greater than0.7, the test of reliability is acceptable; the estimated alpha coefficient equals to 0.821, so the questionnaire is reliable.

For finding the sample size, we used Cochran's formula and the result was 300.Then, we utilize Probit Model in order to evaluate and express the effects of setting deposit insurance.

In dummy regression variable models, it implicitly assumed that the dependent variable Y is quantitative whereas the explanatory variables are either quantitative or qualitative. There are specific type of regression models in which the dependent or response variable is dichotomous in nature, taking a one or zero value. There are several examples where the dependent variable is dichotomous. A unique feature of all examples is that the dependent variable is of the type, which elicits a yes or no response. There are several estimation / inference problem associated with such models. The most commonly used approaches to estimating such model are the Linear Probability model, the Logit model and the Probit model.

Let's assume that, the idea of the I^{th} person to trust in banks by Deposit Insurance or not, depends on unobservable utility index I_i, that is determined by the explanatory variables in such a way that the larger the value of index I_i, the greater the probability of the person trust in banks by the existence of Deposit Insurance.

The index I_i specified as

$$I_i = \beta_1 + \beta_2 X_i \qquad (1-2)$$

where X_i, is the income of a person, for instance.

Some variables such as the financial situation, education, age and other variables, which belong to personal information of the respondent, and other variables like liquidity perception of central bank assurance, their inflation prediction, and cash preferences will help us to analyze them in order to obtain a rational conclusion to show the effects of setting deposit insurance.

One of the dependent variable named as bankruptcy. *Bankruptcy* question shows the perceived safety of deposits by two groups of people; first, who do not received any explanation on the deposit insurance establishment and second who were informed about deposit insurance in Iranian banking system. We asked this question: "If bankruptcy occurs, deposits will be paid back completely by I.R. of Iran central bank (or any responsible institution)".

We analyzed the dependent variable by using *Stata* software.

RESULTS

Table 1 presents a detailed view of the data collected. In particular, the table summarized Probit estimation results for a variable: *Perceived safety of deposits*. For the dependent variable, the research estimated four specifications.

The first column is the coefficients between the dependent variable and independent variables, which shows the direct or indirect relationship. The second column shows the standard deviation error, the third column is the z value and the fourth one is the p-value that helps us to reject or not reject the null hypothesis. It must be mentioned that the null hypothesis is that: by introducing deposit insurance to depositors, their trust on Iranian Banking System will decrease.

In Table 1 we concentrate on the ninth question (of the questionnaire) as a dependent variable (perceived safety of deposits), and other questions as independent variables.

Table 1: Estimation result "*Perceived Safety of Deposits*"

Perceived Safety of Deposits				
	Coef	Robust Std.Err.	z	p > z|
	(1)	(2)	(3)	(4)
Awareness	-1.601598	0.1984254	-8.07	0.00
Age	0.00368	0.0079048	0.47	0.641
Gender	-0.025582	0.1842214	-0.14	0.890
Occupation	-0.165023	0.18229	-0.91	0.365
Income	-0.46387	0.20320	-2.28	0.022
Financial Situation	0.15284	0.0744	2.05	0.040
Education	0.01083	0.0289	0.37	0.708
Household Head	-0.13788	0.2128	-0.65	0.517
Expect Depreciation	-0.164633	0.1783	-0.92	0.356
Inflation Expectations	-0.228526	0.1754	-1.30	0.193

Table 1 shows that only three variables are significant statistically. "Awareness", "Income" and "Financial Situation" are the variables which affect the dependent variable "Perceived safety of deposits" because the p-value related to these three variables is less than 0.05. The coefficients and its signs represents in the first column.

However, other independent variables are not significant, but their signs are as expected.

- ✓ Awareness has a negative relationship with the Perceived safety of deposits; it means people who were informed about deposit insurance have lower trust in the safety of deposits.
- ✓ Age has a positive relationship with the Perceived safety of deposits; it means older people of the sample have higher trust in the safety of deposits.
- ✓ Gender has a negative relationship with the Perceived safety of deposits; it means men have lower trust in the safety of deposits.
- ✓ Occupation has a negative relationship with the Perceived safety of deposits; it means people who have government jobs have lower trust to the safety of deposits.

- ✓ Income has a negative relationship with the Perceived safety of deposits; it means people with higher income have lower trust in the safety of deposits.
- ✓ Financial Situation has a positive relationship with the Perceived safety of deposits; it means people with a good financial situation have higher trust in the safety of deposits.
- ✓ Education has a positive relationship with the Perceived safety of deposits; it means people with higher education have higher trust in the safety of deposits.
- ✓ Being a household Head has a negative relationship with the Perceived safety of deposits; it means people who are the head of the family have lower trust in the safety of deposits.
- ✓ Expected Depreciation has a negative relationship with the Perceived safety of deposits; it means people who believe that Rial will depreciate versus dollar have lower trust in the perceived safety of deposits.
- ✓ Inflation Expectation has a negative relationship with the Perceived safety of deposits; it means people who believe that during the next 12 months, prices in Iran will rise more rapidly than in the past years have lower trust in the safety of deposits.

CONCLUSION AND SUGGESTION

There are several studies about the effects of setting DIS or increasing its' threshold on the depositors perception about the banking system's ability for insuring safety of the deposits. However, Deposits Insurance Fund regulation was approved on 2012 and it has not been fully implemented by the Iranian banking sector, yet. Although there are some studies about effectiveness of setting DIS in Iran, however to the best of authors' knowledge, no research has been conducted to explore the effects of introducing it on depositors' reaction. As there may be some concerns regarding to the new regulation, in this paper, authors try to investigate whether this new regulation affects Iranian depositors' trust in banking system. In this research, we collected data using questioner. In order to analyze the data, we use Probit regression.

Results indicate that *Awareness* is statistically significant and negatively related to the perceived safety of deposits. It interestingly means that those who were not informed about deposit insurance consider deposits safer. This means that introducing deposit insurance has negative effect on the depositors trust on the banking system.

Regarding the main question—whether setting deposit insurance increase the uncertainty among depositors or whether it increases their trust—the results clearly show that the policy measure increases uncertainty.

The results will contribute to predict that setting deposit insurance in Iranian Banking systems may cause a sharp reduction in people's trust to banks. Consequently, substantial deposit withdrawals may occur.

Therefore setting deposit insurance in Iranian banking system can not be considered as a straightforward measure. Hence, the central bank of the I.R .of Iran should evaluate disadvantages of the action in order to be able to manage the possible crisis that may happen after the policy implementation. Changing people's opinion regarding the safety of deposits and convincing them that bankruptcy is possible is not an easy mission. By considering all aspects and facts of setting deposit insurance for the first time in Iran, the central bank of I.R.

of Iran can successfully implement this mission by providing a secure environment for depositors.

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