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The role of toxic assets in the formation of financial crisis (Case study: Iran central bank's monetary system)

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Abstract

The main objective of this study was to investigate the role of toxic assets in the formation of financial crisis in central bank of Iran. Statistical population of study was 3685 people, including staff of the Central Bank of Iran. Using Cochran formula, the sample size was 348 people. In order to collect data, a self-made questionnaire was used for variable toxic assets and another was used for variable financial crisis. Validity of questionnaire was confirmed by Management experts and its reliability was assessed by Cronbach's alpha. After completing the questionnaire in order to analyze the data, the Kolmogorov-Smirnov test, Pearson correlation and regression analysis were used. The study found that toxic assets dimentions (mortgage assets, Non-Current Assets) are affecting on the formation of the financial crisis the Central Bank of Iran.

Keywords: Toxic Assets, Mortgage Assets, Non-Current Assets, Financial Crisis.

Introduction

Former management perspective based on the stability of the internal environment and control the external environment through anticipated future changes is not considered today and the complexity of relations dominated the inside and outside of the organization is evident, Relationships which with various types of risk, can always cause the plans developed by organizations slow down diverted or stopped and ultimately lead to a crisis on a wide scale. Therefore the biggest challenge for senior managers of organizations is how to deal with these relationships and how to manage and control this aspect of the organization.

Recent topics named toxic assets have been made of the aforementioned events which also known as the main factor in the formation and intensification of the recent global financial crisis which at the same time of this crisis was popularized in financial literature. In addition to the introduce this kind of assets and addressing the different types of it, this article is intended to provide correct way to manage these assets through the proposed solutions.

Significance of the Study

In the recent global economic crisis, the topic of toxic assets was highly regarded, especially in the United States. The toxic assets have a certain value at a time and many people still endorsing their value, even if they have not purchased. But the important thing is that if banks have a lot of toxic assets, these assets

make inflated book value of the bank. But it really does not help to the process of bank financing. In the other words the bank has significant amounts of money on paper but cannot actually sell these assets and as a result, banks will have the least ability to pay. On the other hand holders are reluctant to sell these assets because their value has fallen sharply. By doing so it deemed that some of the toxic assets that are blocking in 2007, their situation worsened in the second half of 2008 and thus the overall market were closed. When the toxic assets are created, has a very high value and it is considered as high-risk and higher-yielding investments. The banks those are more conservative, they often avoid toxic assets; but when they are presented as a package consisting of a low-risk investment, this is exactly the issue that compelling banks to purchase the assets in integration with mortgages and create concerns about the instability of banks and thus destabilize the banking process. At this time, the Bank is unable to find a buyer. Thus, this study sought to determine that How dimensions of toxic assets influencing the financial crisis? (Isavi, 2010).

Conceptual definition of variables

Toxic assets: Toxic assets are an asset that its current market value is much lower than its book Value and in addition, they are turned into cash hardly. Sale of this type of asset is expected, if not impossible and it has harmful effects on the balance sheets of financial institutions. High-risk mortgages and loans are examples of toxic assets (Radpour, 2009).

Mortgage assets: loans or mortgage assets are a kind of toxic assets that their actual value is less than their book value. Obviously, the greater the distance between the two values, increased default rates this type of asset. Banks must maintain its assets at a reasonable value to be able to sell assets at current exchanges (Merton, 2008).

Non-Current Assets: Loans are another type of toxic assets which are non-Current assets; this means that the borrower does not have the ability or willingness to pay according to the contract. These assets are recognized as inefficient loans or assets. Inefficient loans are loans which were at risk of default or have defaulted. Many inefficient loans are usually default after three months but this also depends on contract (Asoudeh, 2010).

Financial Crisis: The financial crisis refers to a situation that currency of the country is faced with the devaluation severely during the crisis and as a result of an attack on the foreign exchange market and the international reserves decreased sharply or a combination of these two happens (Ebrahimi, 2014).

Research goals

The main objectives: Evaluation of the role of toxic assets in the formation of financial crisis in Iran central bank's monetary system

Secondary objectives:

1. Evaluation of the role of mortgage assets in the formation of financial crisis in Iran central bank's monetary system
2. Evaluation of the role of non-current assets in the formation of financial crisis in Iran central bank's monetary system

Hypotheses

The main hypothesis:

Toxic assets are influential in the formation of financial crisis in Iran central bank's monetary system.

Sub hypotheses:

1. Mortgage assets are influential in the formation of financial crisis in Iran central bank's monetary system.
2. Non-current assets are influential in the formation of financial crisis in Iran central bank's monetary system.

Research Methodology

In terms of the goal, this research is an applied research, and in terms of method this research is a descriptive survey study. Statistical population of study was 3685 people, including staffs of the Central Bank of Iran. Using Cochran formula, the sample size was 348 people who are working in different units of the organization to goals and mission of the organization, Simple Random Sampling was used to sampling. Questionnaires were distributed by visiting the scholar in all branches of the Bank the questionnaire was available to employees. Validity of questionnaire was confirmed by Management experts and its reliability was assessed by Cronbach's alpha which is mentioned in Table 1. To analyze the data, descriptive statistical methods (Such as frequency, percentage, mean and standard deviation, etc.) and inferential statistical methods to test the hypothesis (statistical methods such as Kolmogorov-Smirnov test, Pearson correlation and regression analysis) were used.

Table 1. The internal validity

Toxic assets	Dimension	Cronbach's alpha
	Mortgage assets	0.794
	Non-current assets	0.784
	Financial crisis	0.84

The descriptive findings

In this section, demographic variables associated with the sample are presented:

Table 2. Gender of respondents

Gender	Percent
Man	74.6
Woman	25.4
Total	100

As shown in Table 2, 74.6 % of respondents were male and 25.4 % of them were female.

Level of Education

Table 3. Respondent's education

education	Percent
Associate Degree	12.2
Bachelor Degree	84
MA and Ph.D.	3.8
Total	100

As shown in Table 3, Education's Levels of samples were as follows: Associate Degree (12.2%), Bachelor Degree (84%), MA and Ph.D. (3.8%).

Years of Services

Table 4. respondent's years of services

YEARS OF SERVICES	Percent
Under 5 years	36
6-10	32.3
11-15	17.8
16-20	9.6
More than 20 years	3.4
Total	100

Respondent's years of services are mentioned in Table 4. Respondent's years of services were as follows: under 5 years (36%), 6-10 years (32.3%), 11-15 years (17.8), 16-20 years (9.6%), more than 20 years (3.4%).

Descriptive statistics of variables

Descriptive statistics of variables are seen in Table 5:

Table 5. Descriptive statistics of variables

Variables	Average	Standard deviation
Toxic assets	3.1	1.17
Mortgage assets	3.2	1.02
Non-current assets	3	1.5
Financial crisis	3.2	1.4

Inferential statistics

Normal distribution of data

To assess the normal distribution of data Kolmogorov-Smirnov test is used which is the free distribution test. The assumptions are as follows.

H0: data distribution is normal.

H1: data distribution is not normal.

Results of Kolmogorov – Smirnov test is shown in Table 4-6. As can be seen, achieved significant level were more than 0.05 in all variables ($P>0.05$). As a result, the null hypothesis is confirmed and the alternative hypothesis is rejected, this means that we can say with 95% confidence that the data are normally distributed.

Table 6. The results of Kolmogorov-Smirnov test for normality of data

	Toxic assets	Mortgage assets	Non-current assets	Financial crisis
Kolmogorov-Smirnov	**1.14**	**0.906**	**0.812**	**0.821**
significant level	**0.148**	**0.385**	**0.321**	**0.395**

Because all variables were normal at 5%, so Pearson parametric test can be used to measure the relationship between variables. Also, because the criterion variable was normally distributed (5%), linear regression can be used to predict the criterion variable using the significant predictors. Now, testing hypotheses will be discussed using inferential statistics.
The main hypothesis: Toxic assets are influential in the formation of financial crisis in Iran central bank's monetary system.

Table 7. Pearson correlations results for the analysis the relationship between of toxic assets and financial crisis

	References	Toxic assets	Financial crisis	The significance level	Valid sample
Pearson correlations test	Toxic assets	1	0.71	0.000	348
	Financial crisis	0.71	1	0.000	

To analyze the relationship between toxic assets and financial crisis in the main hypothesis of the study Pearson correlation test was used due to the distance and the normality of variables. The results of Pearson correlation test to measure the relationship between two variables has been shown in Table 7. As seen the achieved significance level was (P=sig=0.000) and because it was smaller than 05/0 (P = 0/000 <0/05), as a result can be claimed with 95% confidence that there is a significant and positive linear relationship between the variables of competitive intelligence, brand and product specialists statistically, that's mean the lack of relationship between two variables and zero correlation coefficient was rejected, that the main hypothesis is confirmed.
First sub hypotheses: Mortgage assets are influential in the formation of financial crisis in Iran central bank's monetary system.

Table 8. Pearson correlations results for the analysis the relationship between of mortgage assets and financial crisis

	References	Mortgage assets	Financial crisis	The significance level	Valid sample
Pearson correlations test	Mortgage assets	1	0.43	0.000	348
	Financial crisis	0.43	1	0.000	

To analyze the relationship between marketing intelligence and product brands, in the first sub hypotheses of the study Pearson correlation test was used due to the distance and the normality of variables. The results of Pearson correlation test to measure the relationship between two variables has been shown in Table 8. As seen the achieved significance level was (P=sig=0.000) and because it was smaller than 05/0

(P = 0/00 <0/05), as a result can be claimed with 95% confidence that there is a significant and positive linear relationship between the variables of mortgage assets and financial crisis, that's mean the lack of relationship between two variables and zero correlation coefficient was rejected, that the first sub hypotheses is confirmed.

Second sub hypotheses: Non-current assets are influential in the formation of financial crisis in Iran central bank's monetary system.

Table 9. Pearson correlations results for the analysis the relationship between of Non-current assets and financial crisis

	References	Non-current assets	Financial crisis	The significance level	Valid sample
Pearson correlations test	Non-current assets	1	0.68	0.000	348
	Financial crisis	0.68	1	0.000	

To analyze the relationship between non-current assets and financial crisis, in the second sub hypotheses of the study Pearson correlation test was used due to the distance and the normality of variables. The results of Pearson correlation test to measure the relationship between two variables has been shown in Table 9. As seen the achieved significance level was (P=sig=0.000) and because it was smaller than 05/0 (P = 0/000 <0/05), as a result can be claimed with 95% confidence that there is a significant and positive linear relationship between the variables of competitive intelligence and product brand, that's mean the lack of relationship between two variables and zero correlation coefficient was rejected, that the second sub hypotheses is confirmed. The multiple regressions are used to determine the impact of toxic assets on the financial crisis.

Table 10. Analysis of variance to test the validity of the regression model

Model	sum of squares	Degrees of freedom	average of squares	F statistic	The significance level
Regression	1094.144	5	218.829	5.605	0.000
Error	803.104	163	0.472		
Total	1897.248	168			

Table 10 is presented the analysis of variance results to test the validity of the linear regression model with at least one independent variable and the resulting model is valid due to table results and the significance level in the last column of the table(P = 0/000 <0/05).

Table 11. The results of multiple regression analysis to determine the impact of competitive intelligence on product brand

Predictor variables	The criterion variable	R2	B	P
Constant			0.5678	0.000
X1 toxic assets			0.18	0.000
X2 mortgage assets	The financial crisis Y	0.42	0.29	0.000
X3 Non-Current Assets			0.45	0.000

According to Table 11, the amount of R2 shows that 42% of dispersion (variance) of financial crisis variable is explained by linear combination of toxic assets components. All regression coefficients are significant because (P <0/05). Coefficients β (regression coefficients) indicate that toxic assets (β=0.18, P<0.05), mortgage assets (β=0.29, P<0.03), non-current assets (β=0.45, P<0.05), are predictors of financial crisis.

Discussion and conclusion

As mentioned, today a significant portion of the balance sheets of banks allocated to the inefficient assets or loans. In our country this is somehow true so that today the banks are faced with a huge amount of non-current claims (past due, overdue and doubtful). For some reason this kind of claims is causing obstruction of the assets in the banking system. Therefore, this issue needs to be revised on the monetary and banking authorities and decision-makers behalf, meanwhile further study about NPL markets at the international level and the feasibility of its compliance with the requirements of Islamic banking in the country, take effective measures for optimal management of these assets. Banks should implement internal ratings systems and based on the outcomes of this process, effective management of the lending and required save up done, in order to prevent exposure to this kind of bank assets.

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