

## The Risks of Using Computerized Accounting Information Systems in the Jordanian banks; their reasons and ways of prevention

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### Abstract

This study aimed to identify the risks of computerized accounting information systems in the Jordanian banks, their reasons and ways of prevention. To achieve this, a questionnaire was designed and distributed to a sample consisted of 63 respondents who work as assistants of the general managers, managers of departments, branch managers and their assistants and the employees in the Jordanian banks. After data was analyzed using SPSS, it was concluded that there were risks threatened the security of the accounting information systems in the Jordanian banks; regarding the employees as the employees' entry of bad data intentionally, risks regarding viruses' entry into these systems, risks regarding the internal control as the unauthorized to see the outputs, and risks regarding natural and unnatural disasters done by human. And the study concluded that one of the most important for having these risks is the bank's employees' lack of experience in keeping the information's security which are represented in lack of employees' training on using the means of protecting the accounting systems before starting their work and the lack of a suitable system of recruitment that appoints the appropriate person in the appropriate place.

The study recommended some procedures to be used by the banks to reduce the effects of the risks of the computerized accounting systems as the administration of bank's updating the means of protection according the technological development continuously and keeping substitute copies of information in a safe and far places, carrying out procedures to protect the computerized accounting information system by insuring a close and fire-resistance place (physical protection) and developing and implementing a system of internal control characterized by strength.

The study also recommended the following: the necessity to increase the Jordanians' banks interest in developing effective internal control systems of the computerized accounting information systems, the necessity of the Jordanian banks to keep up with the continuous technological developments, and to hold continuous training courses to the new and old employees; to show the importance of their commitment to the control procedures regarding the safety and security of the computerized accounting systems and to train them on these procedures.

**Keywords:** The computerized accounting information systems, The internal control, The risks of the accounting information systems, The security of the accounting information systems.

### 1. Introduction

The great development in information technology and its availability have led currently to an increase in the organizations' dependence in their work on the computerized programs and systems in different fields and at all levels. And the banks were the most important sectors that was affected by this development and transformed to the use of the computerized accounting information systems which led to the development of the financial and administrative performance and the improvement of taking decisions' processes in the banking sector as they provided statistical methods and testing tools which help in evaluating the performance and taking decisions (Naesa, 2009), (Kabi, 2004), (Santhanam and Hartono, 2003).

But this development in the accounting systems in the banking sector was accompanied by the exposure to multiple important risks regarding the security and safety of the computerized accounting information systems specially this development was not accompanied with similar development in the capabilities and in the human resources' efficiency by the users of the technology and it also was not accompanied with similar development in the practices and control disciplines which intern creates a type of risk affects the suitability, reliability, content safety and the integration and confidentiality of the accounting systems which may lead to damage caused essential losses to the bank (Zweilf, 2009).

Thus the organizations in general and the banks in particular should be more aware of the possible security risks that threaten the security of its systems and the efficiency of its use so as to avoid these risks and reduce its negative effects as far as possible and therefore this study came to identify the risks that threaten the computerized accounting information systems in the Jordanian banks and the ways of preventions.

## **2. The problem of the study**

The banking sector is considered as the most developed sector in term of following up the technological development which depends for a high degree on the computerized information systems in covering all of its works, activities and services and this was due to the increase of the information size which should be processed and stored and this required speed and accuracy, and ensure the correct recording and storing of the accounting data that are consistent with the accounting rules and principles and reducing the unintended mistakes and stopping fraud as far as possible. But this development is followed by many risks which threatens the security and the integration of the accounting information systems which lead to big physical and moral loss that harm the banks' interests. Based on this, the problem of the study is represented by the following questions:

1. What are the risks of the computerized accounting information systems in the Jordanian banks?
2. What are the reasons of the risks of the computerized accounting information systems in the Jordanian banks?
3. What are the possible means of prevention to reduce the risks that threaten the accounting information systems in the Jordanian banks?

## **3. The objectives of the study**

This study aimed to:

1. Identify the risks that threaten the computerized accounting information systems in the Jordanian banks.
2. Identify the causes of the risks of the accounting information systems in Jordan.
3. Identify the possible preventive means that should be followed in the Jordanian banks to reduce the risks that threaten its computerized accounting information systems.

## **4. The significance of the study**

This study gets its importance for being the first study that discussed the risks of the computerized accounting information systems in the Jordanian banks and for the importance of the topic that it discussed ; the computerized systems are exposed to many internal and external risks and to what extent this situation becomes a source of threat to the appropriateness, reliability, content safety and the confidentiality of the accounting information and all of these previous reasons make this subject a resource of concern of the administrations of the organizations in general and the banks in particular to protect data and the information that their loss or change or just viewing them may cause problems, losses, threats and other types of risks.

## **5. The theoretical frame and the previous studies**

The accounting system has a group of tasks in the organization represented by collecting, storing the data regarding the activities and the operations, processing data, producing information that helps stakeholders to take their decisions and ensure sufficient control to guarantee recording and processing the work accurately (Qasem, 2010). The computerized accounting information systems face various risks that may affect achieving the objectives of these systems because of their dependence on the computer. The great development in the information technology and the rapid spread of this development in using the computerized information synchronized with many risks and problems that affect the information security whether these risks were intended and unintended. The intended risks are considered as the most dangerous ones on the performance of the system efficiency. The danger of the problems of the information security are felt in many aspects as: reducing the performance of the computer systems or damaging them completely which lead to disable the essential services of the company while the other side includes the information confidentiality and integration where access into the classified information or change them leads to financial losses or moral ones ( Boheisi, &Sharef, 2008).

The risks that may the systems' security exposed to are divided regarding many basics that can be classified as follows:

- a- The source: internal and external risks.
- b- The perpetrator: resulted from human and non-human elements.
- c- The intention: intentional and unintentional actions.
- d- Their relation with the system stages: Input, processing and output ( Romney and Steinbart, 2003, 191).

**The most important studies that discussed this topic were:**

The study of (Sakini and Awada, 2011) entitled by : “ Risks of using information technology and its impact on the performance of the accounting information systems”, aimed to measure the impact of using information technology on the performance of the accounting information systems. The sample of the study consisted of shareholding companies listed in Amman Stock Exchange. The study concluded that there is a relation of effect between risks of using the information technology and the performance of the accounting information systems especially the operation risks and the risks’ lack in specifying the authorities.

- The study of (Heldni and Alanan, 2010) entitled by : “ The role of the internal control in light of the electronic accounting information systems” aimed to identify the internal control and its methods to show its extent of participation in achieving the banking security in light of the electronic accounting system. The study concluded the need to an effective internal control that keeps up with the development in the environment of information technology and in a way that facilitates its integrated capabilities with the financial and administrative systems and there is a significant moral role to the general control methods on the applications in achieving reliability of the prepared information by the banks. And since the accounting information systems are open systems, there is a need to take into consideration the changes that happened in the surrounded environment and try to get benefit from them.

- The study of (Zweilf, 2009) entitled by: “The threat’s nature of the security of the electronic accounting information systems” aimed to shed light on the threats that face the security of the electronic accounting information systems and identify its extent of existence in the Jordanian insurance companies. And the result concluded that the threats of the security of the electronic accounting information systems are represented by: the unintended insertion of wrong data by the employees, stealing the computer’s time and use it for personal purpose and participating in the password, the unintended damage of the data by the employees and inserting viruses into the computer’s system and guiding wrongly the outcomes for people who are not authorized to receive them.

- The study of (Abo-Mousa, 2006) entitled by: “Examining the threats regarding the computerized accounting information systems in the developing countries: A field study on the Saudi organizations” aimed at identifying the threats that threaten the accounting information systems in the Saudi companies. And the study concluded that the accidental and intentional entry of bad data, the accidental destruction of data, the employees’ sharing of password and the introduction of the viruses into the computers are the most important risks which the computerized accounting systems can be exposed to and there is no difference attributed to the type of the company or the economic sector that it belongs to.

- The study of (Whitman, 2003) entitled by: “ The threats of information security” aimed to limit the threats that face the information security, its danger, its monthly repetitions in the American companies. The study concluded that that there were real existence of threats with a high degree of danger and it was difficult to protect the systems which are exposed to threat and it focused on the administration role to be aware of such threats and to increase its awareness in the field of understanding the security of data and its surrounded environment.

- the study of (Waren, 2002) entitled by: “ The security practices” aimed to study the most important problems facing the information systems in a sample of American, British and Australian firms. The study concluded that the weakness of the technological security procedures is the most important problems of information systems in the British firms, the weakness of the technological security policies is the most important problems in the Australian firms and the wrong intended entry of the financial data represents the most important problems of systems in the American firms.

What distinguished this study is that it aims to identify the risks of the computerized accounting information systems in Jordan, its causes and ways of prevention where no one of the previous studies have discussed before.

#### **6. Hypotheses of the study:**

**The first null hypothesis:** there are no risks threaten the computerized accounting information systems in the Jordanian banks regarding the employees.

**The second null hypothesis:** there are no risks threaten the computerized accounting information systems in the Jordanian banks regarding the viruses.

**The third null hypothesis:** there are no risks threaten the computerized accounting information systems in the Jordanian banks regarding the internal control.

**The fourth hypothesis:** there are no risks threaten the computerized accounting information systems in the Jordanian banks regarding the environmental elements.

**The fifth hypothesis:** the elements regarding the employees' lack of experience are not considered as one of the reasons of the risks of the computerized accounting information systems.

**The sixth hypothesis:** the elements regarding the weakness of the internal control system are not considered as one of the reasons of the risks of the computerized accounting information systems

**The seventh hypothesis:** there are no preventive procedures used to reduce the risks of the computerized accounting information in the Jordanian banks.

### 7. Methodology of the Study

For achieving the objectives of the study, the descriptive analytical method was used. In addition, the suitable statistical procedures, SPSS were used for testing the hypotheses and for presenting and analysis of the data.

#### 7.1 Methods for Collecting Data

The researcher depended on two kinds of data during collecting it

1. Secondary data: the related studies of auditing about the subject of the study were reviewed from different references, magazines, studies, periodicals, etc. for developing the theoretical background of the study.
2. Primary data: the researcher made a comprehensive field survey for the population of the study by using a questionnaire to collect data and test the hypotheses of the study. The questionnaire consisted of two parts. The first part aimed at collecting general data to identify the characteristics of the sample of the study. The second part aimed at getting data related to study hypotheses.

#### 7.2 The population and the sample of study

The population of the study represented all the Jordanian banks which are 13 commercial banks and 3 Islamic banks. While the sample of the study which is selected randomly, consisted of 63 respondents of general managers' assistants, branch managers of the Jordanian banks and their assistants, the managers of the departments and the employees in these banks. 70 questionnaires were distributed and 63 ones were retrieved with a percent 90%. The sample of the study can be described as follows

**Table (1) the description of the sample of the study**

<b>Sex</b>	<b>N</b>	<b>Portion</b>
Male	58	92.1%
Female	5	9.7%
<b>Job title</b>	<b>N</b>	<b>Portion</b>
General manager's assistant	3	4.8%
Department's manager	6	9.5%
Branch manager	15	23.8%
Branch manager's assistant	6	9.5%
Manager of employees in auditing department	27	42.9%
Others ( employees in the department )	6	9.5%
<b>Years of experience</b>	<b>N</b>	<b>Portion</b>
Less than 5 years	16	25.4%
5-10 years	20	31.7%
11-15 years	16	25.4%
More than 15 years	11	17.5%

### 8. Statistical Procedures:

The following statically methods were used to analyze data and test the hypothesis according to SPSS:

#### 8.1 Testing the reliability of the tool of the study:

Cronbach Alpha was used to measure the internal reliability of the questionnaire's items and the internal consistency among the responses of the respondents which was 87% and this value is acceptable as it is higher than 60% so the results could be generalized.

#### 8.2 Testing the normality of the distribution:

Kolmogrov- Smirnov test was used to test the normality of the distribution of data. And the results showed that the data was distributed normally. It is illustrated from the table that the significance level 5% for all the hypotheses of the study which was bigger than the level of significance Z, was distributed normally :

**Table (2) The Normality Distribution Test**

Hypothesis	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>
Sig Z	0.74	1.23	1.3	1.3	1.35	1.44	1.37

### 8.3 Testing the hypotheses:

One Sample T-Test at the level of significance 5% was used to test the hypotheses of the study, and according to the rule of the acceptance of the hypotheses if the calculated T was less than the tabulated one. The descriptive analysis, which includes frequencies means and the standard deviations of accepting or rejecting the hypothesis, was used.

#### 8.3.1 The first hypothesis

There were no risks threaten the computerized accounting information systems in the Jordanian banks regarding the employees. And the hypothesis was tested through the first six items of the questionnaire. The results were as follows:

**Table (3) the results of the first hypothesis**

calculated T	tabled T	Sig T	Result of the null hypothesis	Mean	Std
8.55	1.96	0.00	Rejection	3.46	0.43

Since the value of the calculated T is bigger than the value of the tabulated T, this means the rejection of the null hypothesis and the acceptance of the alternative hypothesis. And because the mean is more than 3, it means that it is acceptable according to Lickert Scale. So this means that there were risks threatening the computerized accounting information systems in the Jordanian banks regarding the employees.

Table (4) illustrated the mean and the standard deviation of the items of the first hypothesis.

**Table (4) the items regarding the first hypothesis**

N	Item	Mean	Std
1	The employees' entry of bad data unintentionally.	4.11	0.69
2	The employees' entry of bad data intentionally.	2.51	0.87
3	The damage of the files of the banks' system unintentionally by the employees.	4.02	0.87
4	The damage of the files of the banks' system unintentionally by the employees.	2.46	0.89
5	The access of the unauthorized employees to the system's data.	3.81	0.98
6	There is a common shared password between more than one employees.	3.89	1.00

#### 8.3.2 The second hypothesis

There were risks threaten the computerized accounting information systems in the Jordanian banks regarding viruses. And this hypothesis was tested through the 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> items of the questionnaire. The results were as follows:

**Table (5) the results of the second hypothesis**

calculated T	tabulated T	Sig T	Result of null hypothesis	Mean	Std
9.48	1.96	0.00	Rejection	3.92	0.77

Since the value of the calculated T is bigger than the value of the tabulated T, this means the rejection of the null hypothesis and the acceptance of the alternative hypothesis. And because the mean is more than 3, it means that it is acceptable according to Lickert Scale. So this means that there were risks threatening the computerized accounting information systems in the Jordanian banks regarding the viruses.. And the table (6) illustrates the mean and the standard deviation of the items of the second hypothesis.

**Table (6) the items regarding the second hypothesis**

N	Item	Mean	Std
1	Viruses enter the system through internet.	3.97	1.07
2	The entry of viruses into the system is unintentionally.	3.67	1.04
3	The entry of viruses into the system is intentionally.	4.14	0.93

### 8.3.3 The third hypothesis

There were no risks threaten the systems of the computerized accounting systems information in the Jordanian banks regarding the internal control. And this hypothesis was tested through the 11<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup> and the 15<sup>th</sup> items of the questionnaire. The results were as follows:

**Table (7) the results of testing the third hypothesis**

calculated T	tabulated T	Sig T	Result of the null hypothesis	Mean	Std
5.74	1.96	0.00	Rejection	3.37	0.51

Since the value of the calculated T is bigger than the value of the tabulated T, this means the rejection of the null hypothesis and the acceptance of the alternative hypothesis. And because the mean is more than 3, it means that it is acceptable according to Lickert Scale. So this means that there were risks threatening the computerized accounting information systems in the Jordanian banks regarding the system of the internal control.. And the table (8) illustrates the mean and the standard deviation of the items of the third hypothesis

**Table (8) the items of the third hypothesis**

N	Item	Mean	Std
1	The access of unauthorized people into the system's data.	3.70	1.10
2	The damage or the deletion or illegal the adjustment of specific items of the outputs of the system.	4.10	0.91
3	Giving important documents to unauthorized people to damage them.	4.08	1.03
4	Stealing the system's data or information.	2.06	0.69
5	Making unauthorized additional copies of the system's outputs.	2.11	0.90

6	Unauthorized viewing of the outputs through printing them on paper or displaying them on screens.	4.17	0.92
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#### 8.3.4 The fourth hypothesis

There were no risks threaten the computerized accounting information systems in the Jordanian banks regarding the environmental elements. And this hypothesis was testes through the items 16<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup> of the questionnaire, the results were as follows :

**Table (9) the results of testing the fourth hypothesis**

calculated T	tabulated T	Sig T	Result of null hypothesis	Mean	Std
10.56	1.96	0.00	Rejection	3.95	0.71

Since the value of the calculated T is bigger than the value of the tabulated T, this means the rejection of the null hypothesis and the acceptance of the alternative hypothesis. And because the mean is more than 3, it means that it is acceptable according to Lickert Scale. So this means that there were risks threatening the computerized accounting information systems in the Jordanian banks regarding the environmental elements. And table (10) showed the means and the standard deviation of the items of the fourth hypothesis.

**Table (10) items regarding the fourth hypothesis**

N	Item	Mean	Std
1	The natural disasters have no relation with human as the fires or the floods.	4.13	0.97
2	Power outages	3.84	1.00
3	The unnatural disasters which people committed as deliberate fires.	3.90	0.97

#### 8.3.5 The fifth hypothesis

The elements regarding the banks' employees' lack of experience were not considered as one of the reasons of the risks of the computerized accounting information systems. And this hypothesis was tested through the items 19<sup>th</sup>, 20<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, 23<sup>rd</sup>, 24<sup>th</sup> of the questionnaire. The results were as follows:

**Table (11) results of testing the fifth hypothesis**

calculated T	tabulated T	Sig T	Result of null hypothesis	Mean	Std
7.75	1.96	0.00	Rejection	3.45	0.42

Since the value of the calculated T is bigger than the value of the tabulated T, this means the rejection of the null hypothesis and the acceptance of the alternative hypothesis. And because the mean is more than 3, it means that it is acceptable according to Lickert Scale. So this means that the elements regarding the employees' lack of experience one of the reasons of the risks of the computerized accounting information system.. And the table (12) illustrates the mean and the standard deviation of the items of the fifth hypothesis

**Table (12) the items regarding the fifth hypothesis**

N	Item	Mean	Std
1	Lack of proper recruitment's system appoints the right person in the right place.	4.10	0.91
2	Not recruiting people with appropriate scientific qualifications.	3.81	1.07
3	The new employees are not trained on the means of the protection of the accounting systems before starting their work.	4.11	1.03
4	Lack of appropriate experiences of the banks' employees specially those who deal with the computerized accounting systems.	2.16	1.16

5	The bank's employees' non-commitment to maintaining the bank's system through meeting visitors in their offices.	4.03	0.98
6	The banks' employees' lack of interest in examining the storage means and making sure they are free of viruses before using them in the bank's computers.	2.29	0.70

### 8.3.6 The sixth hypothesis

The elements regarding the weakness of the internal control are not considered as a reason of the risks of the computerized accounting information systems. And this hypothesis was tested through the items 25<sup>th</sup> till the 30<sup>th</sup> of the questionnaire. The results were as follows:

**Table (13) the results of testing the sixth hypothesis**

calculated T	tabulated T	Sig T	Result of null hypothesis	Mean	Std
1.57	1.96	0.00	Acceptance	2.95	0.45

Since the value of the calculated T is less than the value of the tabulated T, this means the acceptance of the null hypothesis and rejection of the alternative hypothesis. And because the mean is less than 3, it means that it is rejected according to Lickert Scale. So the elements regarding the weakness of the system of the internal control are not considered as one of the reasons of the computerized accounting information systems' risks. Table no (14) illustrates the mean and the standard deviation of the items of the sixth hypothesis:

**Table (14) the items regarding the sixth hypothesis**

N	Item	Mean	Std
1	The weaknesses of the internal control system since the jobs are not separated, as they should be.	3.54	1.17
2	The weakness of the internal control in terms of lack of existence of special system of authorization in the bank.	1.86	0.80
3	Lack of specific and written policies and programs to protect the computerized systems.	2.03	0.67
4	Lack of existence of internal auditing committee on the computerized systems.	2.02	0.83
5	Not updating the anti viruses on the devices periodically.	3.92	0.93
6	Lack of accurate employment of the functional and administrative structure that determine the responsibilities and the authorities of each employee in the bank.	4.05	0.99

### 8.3.7 The seventh hypothesis

There were no preventive procedures to reduce the risks of the computerized accounting information systems in the Jordanian banks. And this hypothesis was tested through the items of the questionnaire from 31<sup>st</sup> till the 43<sup>rd</sup>. The results were as follows:

**Table (15) the results of the seventh hypothesis**

calculated T	tabulated T	Sig T	Result of null hypothesis	Mean	Std
13.13	1.96	0.00	Rejection	4	0.60

Since the value of the calculated T is bigger than the value of the tabulated T, this means the rejection of the null hypothesis and the acceptance of the alternative hypothesis. And because the mean is more than 3, it means that it is acceptable according to Lickert Scale. So this means that there preventive procedures that limit the risks of the computerized accounting information systems in the Jordanian banks. And the table (16) illustrates the mean and the standard deviation of the items of the seventh hypothesis:

**Table (16) the items regarding the seventh hypothesis**

N	Item	Mean	Std
1	The bank's administration develops and implements internal control system characterized by strength.	4.08	1.02
2	The administration of the bank carries out procedures for protecting the computerized information systems through providing a suitable closed place that should be fire-resistance (physical protection).	4.11	1.01
3	The bank's administration follows special policies to protect and secure the information.	3.89	1.16
4	The bank's administration assures that every employee has to use a specific password to access the system( logical protection)	4.02	1.07
5	The administration of the bank prepares a comprehensive plan to protect the system from penetration.	3.75	1.27
6	keeping additional copies of information in safe and far places.	4.14	0.87
7	The administration of the bank updates the means of protection according to the technological developments.	4.21	0.76
8	The administration of the bank issues administrative decisions that showed the employees the importance of the commitment to the policies of the system's security and protection.	3.95	0.99
9	The administration of the bank issues compulsory laws to the employees to follow the policies of protecting the computerized systems.	3.81	1.06
10	Encoding the data when they are transferred.	3.94	1.03
11	Using procedures to check of the procedures of sending during transferring data.	3.92	0.97
12	Using the proper insurance to decrease the financial losses as far as possible.	4.08	1.02

## 9. Results

- 1- The computerized accounting information systems in the Jordanian banks face risks that threaten their safety and security regarding the employees as : the employees' entry of bad data unintentionally, damaging the files of the bank's system by the employees of the bank unintentionally, the existence of a unified and shared password for more than one employee, and the access of the unauthorized employees to the system's data. The researcher considers the identification of these risks in important to the banks' administrations to help them to take necessary procedures so as to reduce its occurrence and impact on work.
- 2- The computerized accounting information systems in the Jordanian banks face risks that threaten their safety and security regarding the viruses represented by the viruses'' entry into the system intentionally and unintentionally and, the viruses' entry into the system through the network.
- 3- The computerized accounting information systems in the Jordanian banks face risks that threaten their safety and security regarding the internal control represented by the unauthorized access into the outputs by printing them on paper or display them on the screens, the unauthorized damage or deletion or amendment to specific items of the system's outputs and handling important documents to unqualified people to damage them. And this result agrees with the study of (Zweilf, 2009) in guiding the outputs wrongly to unauthorized people to receive them and with the study of (Mousa, 2006) in terms of the unintended damage of the bank's data.
- 4- The computerized accounting information systems in the Jordanian banks face risks that threaten their safety and security regarding the environmental elements represented by the natural disasters which have

nothing to do with the human as fires, floods, and the non-natural disasters as deliberate fires and power outages.

- 5- The reasons of the risks facing the computerized accounting information systems in the Jordanian banks represented by the employees' lack of experience in maintaining the system's security so that the new employees are not trained on using the means of protecting the accounting systems before they started working, lack of existence of a proper recruiting system appoints the appropriate person in the appropriate place and the lack of the employees' commitment to maintain the bank's system by meeting their personal visitors in their offices.
- 6- The elements regarding the weakness of the internal control are considered as reasons of the risks of the computerized accounting information systems in the Jordanian banks.
- 7- The Jordanian banks can take preventive procedures to reduce the effects of the risks of the computerized accounting information systems as : the bank's administration's updating of the means of protection according to the technological developments continuously, keeping substitute copies of information in a safe and far places, carrying out procedures to protect the computerized accounting information system by insuring a close and fire-resistance place (physical protection) and developing and implementing a system of internal control characterized by strength, carrying out the appropriate insurance to reduce the financial losses as possible, and the administration's assurance that every employee has to have a specific password to enter the system (logical protection).

#### 10. Recommendations

- 1- The necessity to increase the Jordanian banks' interest in developing effective internal control systems of the computerized accounting systems which are characterized of providing appropriate safety to the systems so as the systems can provide information characterized by reliability for the sake of taking decisions and these systems should be integrated with other administrative and organizational systems in the banks.
- 2- The necessity of the Jordanian banks' keeping up with the continuous technological development and getting benefit of all the areas of development regarding the maintenance of the security and safety of the information as possible.
- 3- The Jordanian banks hold continuous training courses to the old and new employees to show them the importance of their commitment to the control procedures regarding the safety and security of the computerized accounting systems and train them to use procedures.
- 4- The banks' adoption of a special system regarding the preventive procedures of the risks of the computerized accounting systems.
- 5- The Jordanian legislative increases the penalties regarding the electronic crimes specially what is concerning the penetration of the banking systems and playing with for what this penetration caused as great harm on the shareholders of the banks.

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