

## **Factors Affecting the Application of Business Risk Audit Methodology in Jordanian Commercial Banks**

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### **Abstract**

*This study aimed to investigate the effect of some factors such as (size of bank, technological development, and availability of the characteristics of auditor) on the application of business risk audit methodology in Jordanian commercial banks. In order to achieve the objectives of the study, a questionnaire was designed and distributed on internal auditors and internal audit managers in 13 Jordanian commercial banks. The study sample consisted of 107 internal auditors and Internal audit managers chosen depending on random sampling, the researcher retrieved (94) of them, (11) were excluded because of Lack of filling seriousness, The final sample of the study was (83). To test hypotheses of the study, the researcher used multiple linear regressions. The study results showed an effect of the factors (size of bank, technological development, and availability of the characteristics of auditor) respectively and collectively on the application of business risk audit methodology in Jordanian commercial banks.*

**Keywords:** Business risk audit, Jordanian commercial banks.

### **1. Introduction**

In recent years, the worldwide business sector witnessed rapid and successive developments in all life aspects especially after the emergence of large international companies and business expansion. In addition, many of these companies suffered crises that led to major losses. There is an urgent need for attention in the auditing profession to ensure the proper functioning of audit work to ensure the compliance with senior policies and instructions and to achieve the company's strategic objectives clear from business risks. Business risk is one of the reasons that called for the attention of the internal audit profession, a number of theories have arisen to improve the efficiency and effectiveness of internal auditing. A new methodology was included known as the Business Risk Audit methodology in which appeared at the end of the 20<sup>th</sup> century (Bell et al. 1997).

In Jordan, this methodology is considered one of the new methodologies that companies seek to apply in order to determine the nature of the risks involved in their business environment and attempts to reduce them. In light of the above, this study aims to examine the effect of some factors represented by the following (size of bank, technological development, auditors specific characteristics) in applying the audit methodology based on the business risks in the Jordanian commercial banks. Furthermore, in order to develop scientific evidence related to audit based upon business risk and its application effect upon the Jordanian commercial banks and factors influencing the application.

This research aims to answer the following questions:

- 1) To what extent do Jordanian commercial banks use the audit methodology in which based upon business risk?
- 2) Does the size of the bank create an impact on the degree of application of business risk auditing methodology in Jordanian commercial banks?
- 3) Do technological developments create an impact on the degree of application of business risk auditing methodology in Jordanian commercial banks?
- 4) Is there an impact created by the availability of auditors special features on the application of business risk auditing methodology in Jordanian commercial banks?

## 2. Literature Review (Previous Studies)

The study (**Sanoun & Zarai, 2008**) aimed at determining the impact of business risk, audit risks, researching results related to negotiations to determine audit fees and the acceptance of the audited entity. Audit offices in Tunisia provided the study sample for this study. In order to achieve the objectives of the study, a questionnaire was designed and distributed randomly to the study sample in which represented by (200) auditors. The results of the study showed that the risks have an impact on the negotiations of determining audit fees; the results also showed that the auditors' approval to accept high risked companies is significantly low.

A study carried out by the **Institute of Internal Auditors (2010)** examined the role of internal audit in the activation of the performance of risk management by analysing the role needed and the strategies used to activate the performance of risk management. The study followed the analytical descriptive method. Furthermore, a questionnaire was prepared and distributed in coordination between the Institute of Internal Auditors in the United States, Ireland and Britain. This study led to a number of outcome, of most prominent: the important role of internal auditors in risk management, the presence of a sound understanding of the concept of risk management by the management, in which helps the auditor to develop an audit plan that takes into account the audit approach based upon business risks.

The study conducted by (**Abdullatif & Al Khadash, 2009**) examined the extent of the feasibility and the appropriateness of applying some factors related to the business risk auditing methodology, and the implications of applying this approach to audit firms, and finally to know the impact of lower audit fees on the application of the business risk auditing methodology. Audit offices in Jordan provided the study sample. In order to achieve the study's objectives personal interviews were carried out with auditors from the Jordanian Auditing offices. The results of the study show that auditing offices have adopted a business risk auditing methodology at different levels based on the role of the regional auditing institution. Moreover, the application of audit methodology based on business risk in Jordan is considered a luxury until costs are withdrawn in opposition to limited benefits. The results of the study also showed that a large segment of auditors do not believe that the approach should be applied. As they prefer to not change the known traditional auditing methods, and they desire to sustain the work load without increasing auditing effort and their intentional lack of attention to the legal consequences of not taking business risks seriously. The results also showed that the business risk auditing methodology could be emphasized and fully applied, if the audit institutions efforts are increased by education, the training of auditors and the given importance to the necessity of full application.

The study by (**Hajihaa, 2012**) aimed to identify the factors that affect the risks of the audit risk model. The study sample consisted of auditors from governmental institutions and from private companies in the Iranian environment. In order to achieve the objectives of the study a questionnaire was prepared and distributed randomly to the study sample represented by (60) auditors. The results of the study showed that the most important factors affecting the evaluation of audit risk are those factors affecting inherent risk. Furthermore, the results showed significant differences in the evaluation of audit risk between the auditors from the governmental institutions and others from the private companies.

The study of (**Odoyo et al, 2014**) expanded the indication of the internal role of auditors in risk management in the public sector institutions in Kenya. In order to achieve the study objectives, study questionnaires were prepared and distributed to executive directors, financial managers, operational managers and internal audit managers in nine institutions from the public sector. The results showed that the primary role of internal audit in relation to risk management is the provision of guarantees for the institution on the effectiveness of risk management. In addition, the public sectors management should be obliged to create an appropriate environment for internal auditors support in order to complete their responsibilities effectively, and to provide senior management with assurance on the effectiveness of the business risk management.

## 3. Methodology

The researcher relied on the analytical descriptive method in the study, as this method is one of the most used methods in social and human sciences. In order to collect the study data, the researcher relied on the questionnaire tool in which was designed and distributed to the study sample during the year 2017.

### 3.1. Study Population and Sample:

The study sample consists of all 13 Jordanian commercial banks, which are considered the most important pillars on which the national economy depend on.

The researcher chose the study sample by distributing questionnaires to internal audit employees and managers in the Jordanian commercial banks, the 107 questionnaires were distributed randomly following the random sample method.

### 3.2. Study Hypotheses:

To answer the study problem, the study bases on the following main hypotheses:

**Main Hypothesis:** *There is no statistically proven effect of the factors (size of bank, technological development, and the specific auditor character availability) combined with the application of the audit methodology based on business risk in Jordanian commercial banks.*

The following sub-hypotheses are subdivided:

**Ho 1.1:** *There is no statistically proven impact caused by the size of the bank on the application of the audit methodology based upon business risk in Jordanian commercial banks.*

**Ho1.2:** *There is no statistically proven impact caused by the degree of technological development on the application of the audit methodology based on business risk in Jordanian commercial banks.*

**Ho 1.3:** *There is no statistically proven impact caused by the availability of an auditors specific features on the application of the audit methodology based on business risk in Jordanian commercial banks.*

### 3.3. Data Analysis Methodology:

For the purposes of achieving the study objectives, the researcher complied with the following statistical methods:

- 1) **Descriptive Statistical Method:** the researcher analyses the study data descriptively of all study variables in order to extract and determine several descriptive statistical measures.
- 2) Testing the study hypotheses using the **Multiple Regression Model** in order to examine the factors affecting the application of the business risk based audit methodology using SPSS for this.

## 4. Results Analysis & Hypothesis Testing

### 4.1. Descriptive Statistics of the Study Sample and its Variables:

The researcher distributed (107) questionnaires to internal audit employees and managers in the Jordanian commercial banks. The researcher managed to retrieve 94 questionnaires that were answered however, (11) questionnaires were excluded because the respondents did not respond seriously to the questionnaire. Therefore, the study sample was based on (83) questionnaires. Table (1) shows the study samples demographic distribution:

**Table (1) – Study Sample Demographic Distribution**

Item	Repeat	Percentage
<b>Years of experience in Internal Audit field</b>		
Less than 5 years	44	53%
Between 5-10 years	16	19.3%
Between 10-15 years	10	12%
More than 15 years	13	15.7%
<b>Job Title</b>		
Main Internal Auditor	21	25.3%
Internal Auditor Manager	11	13.3%
Internal Auditor	51	61.4%
Other	0	0%
<b>Academic Qualification</b>		
Bachelor's Degree	66	79.5%
Master Degree	16	19.3%
PhD Degree	1	1.2%
Other	0	0%
<b>Specialisation</b>		
Accounting	74	89.2%
Finance and Banking	3	3.6%
Economics	2	2.4%
Business Administration	4	4.8%
Other	0	0%

<b>Professional Certifications Obtained</b>		
CPA	2	2.4%
ACPA	0	0%
CIA	23	27.7%
CMA	2	2.4%
JCPA	2	2.4%
Other	14	16.7%
Obtained more than one certificate	1	1.5%
None obtained	39	46.9%
<b>Total</b>	<b>83</b>	<b>100%</b>

Table (1) shows the study samples demographic distribution. It is clear from the table that all members of the study sample hold a bachelor's degree and (20.5%) holding higher certificates. It is also clear that the Accounting degree is the majority of the study sample, where those holding the Accounting specialisation account for (89.2%) of the study sample. As for the experience in the internal audit field, it is noticed that the study sample have good field experience where the percentage of those with experience of more than five years is (47%).

**Table (2) – The Descriptive Analysis for the First Independent Variable (Bank Size)**

<b>Item</b>	<b>Repeat</b>	<b>Percentage</b>
Current Number of Bank Employees		
Less than 250	5	6%
From 251 – 500	8	9.6%
From 501 – 750	15	18.1%
From 751 – 1000	29	34.9%
More than 1000	26	31.4%

Table (2) presents the descriptive analysis of the first independent variable (bank size). The table shows that most of the banks in the study sample range from 751 – 1000 as the percentage is the largest being (34.9%) of the study sample.

**Table (3) – The Descriptive Analysis for the Second Independent Variable (Technological Developments)**

<b>Technological Development</b>	<b>Mean</b>	<b>S-Deviation</b>
The application of internal audit based on business risk requires special technology	3.33	1.42
Continuous technological development is an important requirement for applying internal audit based on business risk	3.42	1.52
The current technology applied in banks is sufficient to apply internal audit based on business risk	3.54	1.29
Periodic observations took by staff working on the system regarding its performance and quality of work with ways to improve the system	3.66	1.19
The system contains integrated data including all documents, files and records that help to achieve the systems objective effectively	3.71	1.42
Improvements and periodic improvements required to the applied system are available according to users' needs	3.82	1.19
Necessary control over the system is available by specifying the access privileges to authorised personnel only	3.86	1.30
The Intranet of the applied system has the speed and efficiency needed to operate the system	3.87	1.31
The availability of physical and technical protection requirements and all intrusion prevention systems that prevent access to databases by unauthorised personnel	3.98	1.21
Updates required for the system periodically to resolve problems and errors within the system are available	4.01	1.17
<b>Total Column Result</b>	<b>3.72</b>	<b>1.00</b>

Table (3) presents the descriptive analysis for the second independent variable (technological development). It is noticed that some items received average importance, while other items were considered of high importance. The lowest mean belonged to the item 'The application of internal audit based on business risk requires special technology' (3.33), whereas the highest mean belonged to the item.

‘Updates required for the system periodically resolving problems and errors within the system are available’ (4.01). The average of total answers mean was (3.72) which is of high importance. The standard deviation of the items was (1.00) indicating the dispersion of the sample responses from the mean. The researcher believes this is due to nature of the study sample, which are Jordanian commercial banks. The Jordanian commercial banks are of the most companies that are interested in technological development in order to attract customers and provide the best service possible.

**Table (4) – The Descriptive Analysis for the Third Independent Variable (Availability of Auditors Specific Features)**

<b>Availability of Auditors Specific Features</b>	<b>Mean</b>	<b>S-Deviation</b>
The bank provides sufficient internal audit training for Internal Audits	3.24	1.50
Accounting information and audit experience are available to auditors about audit in order to enable them to deal with audit correctly	3.41	1.45
The banks internal auditors have the sufficient understanding of internal audit	3.42	1.52
The internal audit components are clear and easy to understand	3.61	1.18
The banks auditors have all the necessary skills to implement the audit work	3.67	1.33
Auditors have a broad knowledge base on how to work with different accounting systems related to the best auditing application	3.82	1.19
The auditor develops their method in the preparation of reports in order to express neutral technical opinion	3.86	1.45
Auditors can easily complete their work without having to seek help from specialists	3.86	1.05
The auditor develops methods of relying on evidence and evidence in the preparation of his report	3.98	1.21
Guidance and training are provided to the auditors when any update is made to the system	4.01	1.17
<b>Total Column Result</b>	<b>3.69</b>	<b>0.90</b>

Table (4) shows the descriptive analysis of the responses to the independent variable questions (availability of auditors specific attributes). The table shows that most of the items in the columns were of high importance, which therefore explains why the total items of the column obtained an average of (3.69). The accounted average for the minimum item that states “The banks internal auditors have the sufficient understanding of internal audit” is (3.24) which is of medium importance. While the highest mean scored was for the item that stated, “Guidance and training are provided to the auditors when any update is made to the system” with a (4.01) mean showing highest importance. It is also noticed from the table the relative decrease of the total deviation of the total column items that was calculated as (0.90). This indicates that there is an agreement by the study sample on the importance of this item, indicating the availability and presence of the auditors’ specific characteristics in Jordanian commercial banks.

**Table (5) – Descriptive Analysis of the Dependent Variable**

<b>Audit Methodology based on Business Risk</b>	<b>Mean</b>	<b>S-Deviation</b>
The degree of effectiveness of the communications systems used to manage bank operations	3.24	1.36
The degree of effectiveness of the methods used for the prevention and public safety with data security	3.34	1.47
Occurrence of natural disasters, this can affect the business of the bank of which is being audited	3.36	1.51
The effectiveness of the management information systems used in the bank’s operations	3.37	0.96
The degree of accuracy of the financial statements required for decision making tasks	3.55	1.59
Banks loss of outstanding human resources	3.60	1.34
Possible sudden changes of bank reputation	3.64	1.19
The exposure of illegal incidents such as theft, burglary and embezzlement	3.65	1.10
Changes occurred to the quality of some operations dependent resources	3.82	1.27
Security disturbances that could affect the banks business	3.82	1.19
Informing unauthorised staff specific information	3.92	1.30
The degree of credibility of data related to the banks business	3.95	1.37
Sudden changes that can occur in the degree of satisfaction and loyalty of customers	3.99	1.14
Outbreak of political disputed with countries associated with the banks auditing by economic relations	4.05	0.99
Sudden changes in trade policies in which can affect the banks operations	4.13	1.04
Sudden changes in the banks resources in which can affect the functioning operations	4.19	1.03
<b>Total Column Result</b>	<b>3.73</b>	<b>0.72</b>

Table (5) shows the descriptive analysis of the responses to the dependent variable (audit methodology based on business risk). Some of the items in this column were of medium importance, while others were of high importance. The lowest average was (3.24) which shows that the internal auditors in the study sample banks show medium importance to the item “The degree of effectiveness of the communications systems used to manage bank operations” when conducting the audit process. Furthermore, the highest accounted average was (4.19) indicated that internal auditors in Jordanian commercial banks give high importance to the item “Sudden changes in the banks resources in which can affect the functioning operations” during the audit operation. The total arithmetic average of answers of column was (3.73) showing a general high importance similarly to the standard deviation of the column (0.72). This indicates the extent to which the sample responses were dissociated from the arithmetic mean.

#### 4.2. Testing the Study Hypotheses

**Main Hypothesis Ho1:** There is no statistically proven effect of the factors (bank size, technological development, and the availability of auditors characteristics) combined with audit methodology based on business risk in Jordanian commercial banks. In order to prove or negate the main null hypothesis, the researcher used the multiple regression test based on the *Fisher (F)* distribution in order to judge to what extent the model as a whole has an explanatory power and its relevance in therefore representing the relationship between the independent and dependent variables. Where the value of (**F**) calculated must be more than its accepted table value in order to accept the model. Moreover, the calculated (**T**) value was depended and used to determine the effect of the independent variable on the dependent variable. In order to reject the null hypothesis and accept the alternative hypothesis, the absolute (**T**) value calculated must be more than the table value at the level where (**Sig**) is less than 5%. In addition, the value of the (**Adjusted R Square**) must depend on to indicate the accuracy of the interpretation of the independent variables on the dependent variables.

**Table (6) – Main Hypothesis Multiple Regression Test Results**

<b>ABR= <math>\beta_0 + \beta_1 * size + \beta_2 * TD + \beta_3 * SFA + e</math></b>				
<b>Model</b>	<b>B</b>	<b>Coefficients</b>	<b>T</b>	<b>Sig</b>
<b>Constant</b>	1.178	.....	5.919	0.000
<b>size</b>	0.116	0.177	2.248	0.027
<b>TD</b>	0.356	0.495	5.231	0.000
<b>SFA</b>	0.213	0.267	2.807	0.006
<b>F test Model= 60.640</b>		<b>Sig F= 0.000</b>		
<b>F Distribution Table = 3.471</b>		<b>T Distribution Table = 1.663</b>		
<b>Adjusted R Square= 0.686</b>		<b>R= 0.697</b>		

The ABR refers to the dependent variable, which is the audit methodology based on business risk. Size refers to the size of the bank as an independent variable, TD refers to technological development, and SFA indicated that the auditor has the available features as an independent variable.

Table (6) shows the results of the multiple regression test of the independent study variables (bank size, technological developments and the availability of auditors' features) and their effect on the dependent variable (audit methodology based on business risk). The (**F**) result calculated was (60.640) which is greater than the table value of (**F**) which is (3.471). These results indicate that the proposed model is highly suitable and explanatory, the results of the multiple regression analysis showed that **Sig F** is 0.000, which is significantly lower than the test result that was 0.050. Therefore, the null hypothesis **Ho** is rejected and the alternative hypothesis **Ha**. This statistical evidence clearly shows there is an effect by the factors (bank size, technological development and the availability of auditors' features) all combined on the application of audit methodology based on business risk in Jordanian commercial banks. As shown by the results of the multiple regression test, the correlation coefficient value **R** is (0.697) which confirms the presence of a positive and high relationship between the independent variables (bank size, technological developments and the availability of auditors' features) and the dependent variable **ARB** (audit methodology based on business risk). The **Adjusted R Square** value calculated of (0.686) meaning that only 68.6% of the fluctuations in the audit methodology based on business risk in Jordanian commercial banks can be explained by the changes in the independent variables.

The relatively low coefficient value indicates that there are other factors besides those mentioned that might have a reciprocal effect on each other. In order to accept or reject the sub-hypotheses of the main hypothesis, the researcher relied on the multiple regression test results in the following: **Ho1.1:** There is no statistical evidence suggesting significant impact caused by the size of the bank on the application of the auditing methodology based on business risks in Jordanian commercial banks. Table (6) shows the **coefficient** value of (0.177) indicating a statistically proven significantly relationship between the independent and dependent variables. This means that the application of the audit methodology based on business risks increases with the size of the bank. In according to the absolute value of the calculated value **T**, the results of the study showed it reached (2.248) which is higher than the table value of (1.663) at freedom degree (82). According to the decision that rejects the null hypothesis if the absolute value of the calculated **T** is higher than its table value at the value of significance, this result is supported by the value of the **Sig T** that was less than 5% at value (0.027). Therefore, the size of the bank affects the application of the audit methodology based on business risk. Accordingly, the first sub-hypothesis is rejected and the alternative hypothesis is accepted. In other words, meaning there is a statistical significant effect by the size of the bank on the application of audit methodology based on business risk in Jordanian commercial banks.

**Ho1.2:** There is no statistical evidence suggesting significant impact caused by the technological developments on the application of the audit methodology based on business risk in Jordanian commercial banks. It is noticed from table (6) that the coefficient value is (0.495); this indicates a strong positive correlation between independent and dependent variables. Furthermore meaning that the application of audit methodology based on business risks increases with increasing technological developments. In terms of the absolute value of the calculated **T**, the result in the study showed (5.231) which is higher than the table value of (1.663) at freedom degree of (82). This supports the **Sig T** value, which was less than 5% at the value of (0.000). Furthermore, in accordance to the decision to reject the null hypothesis **Ho**, the absolute value of the calculated **T** must be higher than its table value at the **Sig T** value less than 5%. Therefore, leading to the conclusion that technological development affects the application of audit methodology based on business risks. Accordingly, the second sub-hypothesis is rejected and the alternative hypothesis is accepted, meaning that there is a statistically proven significant effect by technological development on the application of audit methodology based on business risks in Jordanian commercial banks.

**Ho1.3:** There is no statistical evidence suggesting significant impact caused by the availability of auditors characteristics on the application of the audit methodology based on business risk in Jordanian commercial banks. Table (6) shows that the coefficient value is (0.267) indicating a strong positive correlation between independent and dependent variables. Furthermore meaning that the application of audit methodology based on business risks increases with increasing availability of auditors' features. In terms of the absolute value of the calculated **T**, the result in the study showed (2.807) which is higher than the table value of (1.663) at freedom degree of (82). This supports the **Sig T** value, which was less than 5% at the value of (0.006). Furthermore, in accordance to the decision to reject the null hypothesis **Ho**, the absolute value of the calculated **T** must be higher than its table value at the **Sig T** value less than 5%. Therefore, leading to the conclusion that the availability of auditors' features affects the application of audit methodology based on business risks. Accordingly, the third sub-hypothesis is rejected and the alternative hypothesis is accepted, meaning that there is a statistically proven significant effect by the availability of auditors' characteristics on the application of audit methodology based on business risks in Jordanian commercial banks.

## 5. Study Results

Based on the statistical tests and test hypothesis of the study, the results are summarised as followed: there is a statistically proven significant effect by the factors (size of bank, technological development and availability of auditors' features) all combined in the application of audit methodology based on business risks in Jordanian commercial banks. The findings of this study were similar to the studies of both the (Institute of Internal Auditors, 2010) and (Odoyo et al, 2014).

Firstly, the study proved that there is significant impact by the size of the bank on the application of the audit methodology based on business risks in Jordanian commercial banks. The researcher believes that the reason behind this positive relationship is that the larger the bank the greater the risks it may face. This encourages the bank management to be aware of risk management and the application of audit methodology based on business risk.

Secondly, the study also showed that technological development has a significant effect on the application of auditing methodology based on business risks in Jordanian commercial banks. The researcher believes that the increased technological developments lead to increased interest by the banks management to develop business and success. This increased interest from the bank's management in the continuity and success of the bank leased to its interest in the application of audit methodology based on business risks. Hence explaining the relationship between the evolution of IT systems applied in banks and the increased efforts to apply audit methodology based on business risk.

Finally, the study statistically proved the existence of significant impact of the availability of auditors special features on the application of the auditing methodology based on business risk in the Jordanian commercial banks. The researcher believes that this is caused by the internal audits obtaining special features of auditors in addition to the sufficient experience. This therefore helps the banks management in relying on the auditors in the application of the audit methodology based on business risk without the need to appoint a whole team to manage a risk management department or to appoint a new internal audit team.

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