

# **FACTORS AFFECTING THE PRACTICE OF INCOME-SMOOTHING POLICY (AN APPLIED STUDY ON SUDANESE BANKS)**

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## **ABSTRACT**

*The study problem examined the factors that influence the tendency of the managements of Sudanese banks listed in the Khartoum Stock Exchange to practice the income smoothing policy. The study aimed to explore whether these banks practice the income-smoothing policy and thus to investigate the factors affecting their tendency to practice the income-smoothing policy. The Eckel model was used to classify banks as income-smoothing and non-income-smoothing. The appropriate statistical methods were applied to identify the effect of the following factors (size of the bank, financing structure, tax payments, the form of ownership, the management incentive and bonus plan, and level of profitability) on practicing the policy of income smoothing at the level of Sudanese banks listed in the Khartoum Stock Exchange. The study reached several findings including that the income smoothing policy is practiced at the level of Sudanese banks listed in Khartoum Stock Exchange. In addition, the tax payments represent the most crucial factor affecting the decision of Sudanese banks management to follow the income smoothing policy, followed by the factor of managements incentive and bonus plan, then the factor of the form of ownership. The study recommends reducing the income smoothing process in Sudanese banks by training auditors on the income smoothing policies that can be followed by Sudanese bank managements to influence the financial statements and the results of*

*the business, and thus influence the beneficiaries' decisions as users of these financial statements.*

**Keywords:** Factors Influencing, Engaging, Sudanese, Banks, Income Smoothing.

## INTRODUCTION

The main objective of accounting is to help make rational investment decisions; to achieve this objective, the accounting outputs represented by financial reports contain the elements necessary to measure the company's performance and suitable for determining the size of the risk, all this aim at facilitating the trade-off among investment options available to investors. on the light of the accounting principles which characterized by flexibility attributed to the existence of options and personal judgment and also by giving the management the chance to interfere in the financial measuring and reporting process, the income smoothing policy has emerged as one of the management's undeclared policies to reduce or control the stability of the reported profits figure from one financial period to another, the adoption of the income smoothing policy by management is influenced by the existence of a combination of economic factors (political costs, contractual costs) which motivate management to change the company's declared economic performance, either to avoid or reduce political costs or to influence the contractual outcome.

This study attempts to identify the factors that affect the adoption of the income smoothing policy by the Sudanese banks listed on Khartoum stock exchange using the Eckel model in addition to some other statistical methods.

### Study Problem

The problem stems from the need to study the factors that influence the behaviour of the Sudanese bank managements in terms of practicing the income smoothing policy in order to better evaluate the nature of the accounting figures reported in the financial statements and identify the distinctive features of the banks that tend to smooth the income.

### Study Importance

The study acquired its importance from the following factors:

- There is a lack of studies related to the field of income smoothing by the Sudanese banking sector.
- Identifying the factors influencing income smoothing at the level of Sudanese banks may help in providing a basis for forecasting the accounting behaviour that may be followed by the managements of these banks to influence the accounting information.
- The results of the study can direct the efforts and attention of accounting policymakers at the level of the Sudanese environment towards areas and situations in which income smoothing is more likely to occur.

### Study Objectives

This study aimed at:

- Reviewing and discussing the published literature on income smoothing, focusing on some previous studies concerned with this subject.

- Investigating whether the Sudanese banks listed in the Khartoum Stock Exchange practice the income smoothing policy by using the Eckel model.
- Determining, in light of statistical methods, the relationship between the income smoothing policy at the level of Sudanese banks listed in the Khartoum Stock Exchange and many factors namely: the size of the bank, financing structure, tax payments, form of ownership, the management incentive and bonus plan, and profitability level.

### Study Hypotheses:

*(H1): The income smoothing policy is practiced by Sudanese banks listed in the Khartoum Stock Exchange.*

*(H2): The economic factors (political and contractual costs) have an effect on the tendency of Sudanese banks listed in the Khartoum Stock Exchange to practice the income smoothing policy.*

Taking into consideration the previous hypothesis, the following sub-hypotheses were formulated:

*1: "There is a significant relationship between the size of the bank and the bank's tendency to practice the income smoothing policy."*

*This hypothesis is divided into two sub-hypotheses, each of which refers to a specific aspect related to size:*

*A: "There is a significant relationship between the size of the paid-up capital and the bank's tendency to practice the income smoothing policy."*

*B: "There is a significant relationship between the average size of the total assets of the bank and the bank's tendency to practice the income smoothing policy."*

*2: "There is a significant relationship between the average ratio of tax payments to the total income of the bank and the income smoothing policy."*

*3: "There is a significant relationship between the financing structure of the bank and the bank's adoption of the income smoothing policy."*

*4: "There is a significant relationship between the level of profitability in the bank and the bank's adoption of the income smoothing policy."*

*5: "There is a significant relationship between the form of ownership in the bank and the bank's adoption of the income smoothing policy."*

*6: "There is a significant relationship between the management incentive and bonus plan based on the accounting profit of the bank and the bank's adoption of the income smoothing policy."*

### Secondly-Previous Studies

#### Howedy's study, 1998

The study aimed to provide a basis for guidance that can be used to forecast the accounting behaviour that may be followed by administrations of Kuwaiti shareholding companies to influence the accounting information. The study examines the impact of four factors (hypotheses) on the tendency of these companies to smooth their reported income. These factors are the size of the company, the profitability of the company, the nature of the activity that they engage in, and the ownership structure. The companies under study were classified into income smoothing companies and non-income smoothing companies by using the ECKEL index.

The study reached several results, including that there are income smoothing behaviours among Kuwaiti shareholding companies, in addition to the effect of profitability and ownership structure on companies' tendency to smooth income, whereas the effect of the company's size and type of economic sector to which it belongs is absent.

### **Abdullah Al-Asiri's study, 2002**

The study aimed to investigate empirically whether shareholding companies are practising the income smoothing policy, in addition to examining the influence of the sector to which the company belongs and the size of the company on income smoothing. There were three hypotheses formulated and examined in order to reach the objectives of the study. First, Saudi companies were practicing income smoothing or not; second, the type of sector to which the company belongs has an effect on its practice of income smoothing; and third, the size of the company has an impact on income smoothing.

The study focused on measuring income fluctuations compared to sales fluctuations. The results of the study pointed to the existence of a high rate of the income smoothing behaviour among Saudi shareholding companies. In contrast, the results indicated that the type of industrial sector to which the company belongs, and the size of the company had no effect on the behaviour of practising income smoothing.

### **Riyad and Aqeel's study 2006**

The objectives of the study can be summarized in determining whether there are income smoothing behaviours in the Iraqi shareholding industrial companies listed in the Baghdad Stock Exchange, in addition to explaining income smoothing in the Iraqi industrial environment through five variables: the size of the company, the capital intensity of the company, tax payments, the level of performance, and the type of ownership. The results of the study indicated that the income smoothing phenomenon exists in the Iraqi industrial shareholding companies listed in the Baghdad Stock Exchange. The results of the study also showed that income smoothing companies are characterized by a low percentage of tax payments to total sales compared to non-income smoothing companies. The income smoothing companies were characterized by a high rate of return on assets compared to non-income smoothing companies. The results of the study also confirmed that privately-owned companies tend more to smooth and stabilize income compared to mixed-ownership companies. As for the other determinants (company size and capital intensity), the results did not show a statistical relationship between these determinants and the income smoothing behaviour.

### **Al-Hadi's study, 2009**

The study aimed to measure the extent to which some shareholding companies operating in Sudan follow the income smoothing policy by explaining the effect of sales revenue and cash flows on adopting the income smoothing policy. The study tested two hypotheses. The first hypothesis was that the shareholding companies operating in Sudan follow the income smoothing policy. The most used tools in implementing the income smoothing policy consist of classifying the items into ordinary and extraordinary and allocating them between accounting periods, in addition to the timing of some financial events.

### Manukaji's study, 2018

This study aimed to examine the related corporate governance mechanisms (CEO duality, the board size, ownership concentration, and audit committee) and income smoothing. Firm size and leverage were introduced as control variables. This study is anchored on the agency theory. The study used an ex post facto research design. Four deposit money banks were studied for the period ranging from 2012 to 2016. Eckel (1981) index was employed in determining income smoothing. Multiple regression analysis was employed in analyzing the data. The study concludes that corporate governance has a significant statistical relationship with income smoothing in Nigerian deposit money banks.

## THEORETICAL FRAMEWORK

### The Concept of Income Smoothing

There are many various definitions of the income smoothing process that can be presented as follows:

This is an attempt by the management to reduce the abnormal variation in profits to the extent that is permitted by accepted accounting standards and sound principles of management (Behairy, 1993).

Alternatively, it is *“a method used to remove the extreme variation and the fluctuation that appears in profits and income over different financial periods, and usually includes steps to reduce income from years of high income to use in years of low income”* (Nabil, 2010).

Income smoothing is also defined as *“reducing fluctuations in actual (reported) profitability around a particular profit figure (expected profit) that the management believes is the ordinary profit of the enterprise”* (Al-Sayed, 2009; Al-Asiri, 2002). Alternatively, it is *“the intentional settlement of income to reach the desired level or direction, and it expresses the administration's desire to reduce the abnormal deviations in income that constitute the possible or permitted limit under the principles of accounting and management”* (Rivard, 2003).

Others believes that it is *“the practice of using accounting methods to reduce fluctuations in net income”* (Belkhaoui, 2000).

### Types of Income Smoothing

There are several types of income smoothing processes:

**Natural Income Smoothing:** It is the result of the normal operations and activities of the business organization to generate profits without the interference of the management. In other words, it expresses the method of smoothing that takes place naturally, which is the result of the natural process of generating profits in the company without any unnatural influence (Khalil, 2005).

**Intentional Income Smoothing:** It includes the following types:

A: Real smoothing: It is focused on the operational decisions related to the economic events that the administration uses to manoeuvre the revenues and expenses of the period and to produce the required effect on the reported income, which implies that the real smoothing is the timing of the actual events and transactions depending on their impact on income smoothing and

as is the case with delaying and bringing forward sales at the end of the period (Riyad Al-Abdullah & Aqeel, 2007).

**B: Accounting smoothing:** It is also called the artificial smoothing of income or book smoothing or fictitious smoothing, and it depends on the intervention of the management in choosing between accounting methods and techniques in order to reduce fluctuation in profits between different periods. It does not directly affect cash flows, but rather affects some accounting numbers; it is a transfer of items or elements that constitute the financial statements or a change in the accounting methods used (smoothing by classifying the income statement items) (Al-Abdullah et al., 2007).

**C: Classification smoothing:** This is achieved through the occurrence or recognition of events or what is called the planned timing (such as research and development, maintenance, advertising, and training programs), through the temporal distribution of events (the capitalization or amortization of research and development expenses), or the classification of income statement paragraphs (the classification of some items of gains and losses as normal or abnormal paragraphs (Al-Abdullah et al., 2007).

The present study is concerned with income-smoothing that is intentionally practiced by the company management, and that can be the result of adopting the original smoothing method.

### **Management Motives to Smooth Income**

Many motives lead the management of the accounting units to follow income smoothing practices. Some of these motives are associated the expectations of investors, lenders, and financial analysts in the stock market. Furthermore, others are related to the management's benefit from contracts that depend on the figures included in the financial statements and reports, in addition to avoiding the legal restrictions that the state imposes, such as tax laws, antitrust laws, etc. (El-Meligy, 2008).

Researchers believe that the main motive is to achieve the various actual and moral gains for the management of the economic unit. The actual gains are to increase the incentives, rewards, and salaries of the management, while the moral incentives may be to increase the confidence of the various parties associated with the economic unit in the management and achieve job security, in addition to gaining a good reputation in the field of business that enables it to find alternative job opportunities if it loses the existing opportunity.

### **The Methods of Income Smoothing:**

There are four methods to smooth income (Al-Abdullah et al., 2007):

**A: Timing:** It means that the administration resorts to choosing the time of the occurrence of operations or the approval of financial events in a certain period in which the company's income is smoothed or fluctuations in income can be reduced, such as choosing the time when research and development expenses appear, as well as choosing the time to of the recognizing of these expenses or other expenses and revenues.

**B: Distribution:** It refers to the allocation or distribution of certain revenue expenditure over different financial periods. For example, when calculating the income, the management can choose the straight-line method or the accelerated depreciation method in calculating depreciation.

C: Classification: Certain items of revenues and expenses can be classified, when measuring the income, like ordinary or extraordinary items such as maintenance, research and development, and huge advertising expenses.

D: Change in accounting methods and procedures (inconsistency): There are many methods and policies by which the income can be smoothed. Alternative depreciation methods and inventory valuation methods are used to make the reported income figures in published financial statements consistent with the target income figures.

### **Factors Influencing Income Smoothing**

The company's decision to adopt the income smoothing policy depends on many factors that may differ from one company to another due to the different operating conditions experienced by the company. These factors can be summarized in five main groups as follows:

#### **Political Costs**

Administrative costs mean those costs incurred by the firm, whether directly or indirectly, as a result of taking sovereign decisions, undertaking regulatory actions by the state, enacting legislations by the state that affect the value of the firm, transferring the wealth from the firm to the state or between the parties, i.e. those who have interests in the firm, or increasing state control over the resources available to the society (Saleh, 2003).

Because of the difficulty of directly measuring administrative costs, this is expressed in approximate measures which are as follows:

A: The size of company: It is the most commonly used measure based on the belief that there is an association between the size of the company and its exposure to government interventions. Large-scale economic units gain particular importance in the economies of most countries of the world because of their significant effects on the national economy. The political pressures and the costs resulting from them increase in countries whose economies depend heavily on the activities of these companies and on the economic and social role these companies play (Al-Abdullah & Al-Hasnawy, 2006).

B: payments and savings of tax: The tax reduction motive is essential for the management's tendency towards income smoothing; the management chooses accounting methods and procedures considering the potential effects of these methods and procedures on tax payments. Tax savings are also an important motive behind the administration's manipulation of income to avoid taxes, achieve tax savings, or postpone tax to the future (Abdullah, 1995).

C: Dividends: Before making the investment decision, the investor seeks to estimate the returns on his investment and assess the risk associated with these returns based on the accounting figures reported in the financial statements. Income smoothing supports the investor's estimates regarding the dividends, which leads to improving the company's stock price (Healy & Palepu, 1990).

D: Capital intensity: Capital-intensive companies are relying on the fixed capital more than on the manual labour to perform their activities. Capital-intensive companies receive considerable attention by professional organizations and political lobbying groups in various countries of the world because of the few job opportunities provided by these companies; hence, the management of these companies has more motivation to smooth the income compared to labour-intensive companies (Healy & Palepu, 1990).

E: form of ownership: Ensuring income stability is an important matter that the management tries to maintain in order to ensure that the company is not exposed to violent shocks that may lead the investors to offer their shares for sale, which will reflect negatively on their stock prices in the financial market. Additionally, this does not happen in companies where the state contributes to their ownership (mixed-sector companies) to the same degree as in privately-owned companies. One study indicated that companies that are managed by non-owners have more tendency to practice income smoothing than companies that are managed by owners.

F: favorable credit terms: The lenders specify some restrictions as preconditions for granting credit, and these preconditions relate to the company's profitability, or specify levels for some variables such as liquidity, retained profits, or net income. Therefore, the management may tend to prefer accounting methods and procedures that help mitigate the severity of these restrictive conditions. Consequently, this reflects the administration's reaction to the conditions for granting credit (Khaled, 2009).

G: Risk: High-risk enterprises usually achieve high profits that may cause negative wealth transfers, so they choose those policies that reduce profits. The increase in the degree of fluctuation in the achieved profit can show the enterprise as if it is achieving unusual returns from time to time. This affects the administrative costs incurred by the enterprise, and it also generates incentives to reduce dividends by choosing profit reduction policies (Khaled, 2009).

H: Financing structure: The enterprise with a large debt ratio compared to the owners' equity will tend to choose the methods and policies that lead to higher or early profits; also it will oppose the change to the accounting methods that reduce or postpone the recording of profits in financial reports. Preferring the methods that lead to the increase in net income is due to agreements that exist in most clauses of debt contracts (Nabil, 2010).

I: Management's control versus the owner's control: Some believe that the companies that are under the control of the management have more opportunity to smooth income than companies that are under the control of owners. The more independent the manager, the more the management can smooth income. (Muhammad, 2009)

J: The company's profitability level: The management's ability to smooth income is mostly determined by the amount of profits achieved and expected for the company. Companies that suffer from successive losses over the years have poor performance and low profits; hence, it is difficult to find ways to smooth the income. Thus, the more profitable the company, the higher the possibility of practicing the income smoothing policy. This is because there are many ways available to the company to smooth the income (Junaidi, 2004).

### **The Cost of Contracts:**

It consists of two main elements as follows:

A: Contracts of the management's incentive and bonus: The contracts of the management's incentive and bonus are among the critical financial contracts that form the company because they contribute to achieving a degree of balance between the interests of the owners as shareholders and the management. Usually, the owners resort to a system of incentives and bonuses based on performance to link the interests and goals of the management with the interests and goals of the owners, depending on the information and figures reported in the financial statements. This may motivate the management to intentionally manipulate the financial reporting process in a manner that reflects an acceptable picture of the efficiency and



excellent performance of the management aiming to maximize the value of incentives and bonuses it receives (Junaidi, 2004).

**B: Debt (borrowing) contracts:** While negotiating borrowing contracts, lenders, whether they are financial institutions or persons, often rely on the accounting data and information in the financial statements of the borrowing firm over a specific time series to verify the financial position of this firm and its ability to fulfil the terms of the loan contract (Al-Khayyal & Al-Qassami, 2010). The borrowing or debt contract often includes a set of restrictions or conditions that obligate the firm as a debtor party not to take any actions that may increase the risks that the lender may bear as creditors in order to protect their money and interests and ensure that no transfer of wealth takes place against their interests. Among the restrictions or conditions included in the borrowing contracts (Al-Khayyal & Al-Qassami, 2010) are determining the size and the percentage of dividends to shareholders, specifying minimums to some financial indicators such as the working capital that the enterprise must maintain and maximum limits for some accounting ratios such as the debt ratio, in addition to not performing asset replacement or assets rehabilitation and adhering to specific investment policies to be agreed on.

### **The Impact of the Accounting Environment**

The environmental factors associated with accounting practices play a significant role in this selection. The factors that illustrate the impact of the environment are as follows (Ibrahim, 2009):

**A: Accounting convention:** The administration tends to follow the most common accounting methods in the industry, given that this commonness is a strong evidence of acceptance and appropriateness to practical application.

**B: Degree of reservation:** The firm's selection of the accounting policy depends on the degree of reservation that it follows concerning its accounting policies; the higher the degree of conservatism, the more the firm resorts to selecting accounting methods that minimize profits, and vice versa.

**C: The auditor's opinion:** In cases where the firm does not have a preference for a particular method, the firm is expected to adopt the method preferred by the auditor because of his experience and understanding of the nature of the accounting selection process and its relationship to the environment of practice.

### **Market-Related Motives**

**A: Matching analysts' forecasts to performance and profits:** Investors' investment decisions often depend on the forecasts of financial analysts for the stock market. As a result, the forecasts issued by analysts in the market or issued by the management itself are one of the targeted figures for managing profit in order to build credibility and confidence with the financial markets and investors. So, the management is interested in reporting the results that are consistent with or exceeding these forecasts (Al-Khayyal & Al-Qassami, 2010). **B- Influencing stock prices:** The net profit figure is one of the essential elements of financial reports that investors rely on in assessing the performance of enterprises, forecasting future profits and, consequently, deciding the investment opportunities (Al-Zaki, 2004). Given the management's awareness of this fact, this may persuade it to take actions and follow practices to match the

forecasts of financial investors and analysts in an attempt to influence the performance of stocks in the short term.

### **Other Factors**

A: Job Security: The managers of the firm may occasionally resort to practising income smoothing in order to maintain their positions and jobs. Usually, this happens at the last period of the board of director's contract, where procedures and methods are adopted in order to enable them to maximize the profit figures reported in the financial statements, which gives an excellent impression to the owners of the management efficiency and positive performance too.

B: Obtaining government support: Sometimes, companies may resort to reducing their profits aiming at obtaining government support by utilizing the accounting estimates and the flexibility available in some treatments to reduce their profits.

C: Employment contracts: Workers' representatives usually negotiate with the administration every period in order to raise the levels of wages, bonuses, and end of service compensations. In these negotiations, the administration uses everything possible to obtain concessional labour contracts through which it tries to reduce any proposed increase by the workers' representatives. In this case, the management may resort to earnings management practices in order to reduce profits for the period or periods before the conclusion of the employment contracts (Khaled, 2009).

From what is mentioned earlier, the researchers believe that the motives and reasons for adopting the income smoothing strategy are the administration's desire not to show undesirable financial results, influence the accrued taxes, win the confidence of shareholders and investors, avoid government interference, positively influence the company's shares, and assist lending and borrowing. The administration uses a set of tools and methods that help in adopting an income smoothing strategy, the most important of which is choosing among the alternatives of accounting measurement and evaluation.

## **DATA ANALYSIS AND HYPOTHESIS TESTING**

### **The Study Population and Sample**

The study population consisted of the Sudanese banks listed in the Khartoum Stock Exchange; there were (23) banks until the date of preparing this study. An intentional sample of 20 banks was selected which were characterized by the availability of financial data on financial positions, income, and cash flows, in addition to the availability of information on the applied accounting methods and policies.

### **Statistical Methods Used in Analyzing Data and Testing Hypothesis**

The study used several statistical methods that helped in testing the study hypotheses; these methods include the following:

A: Descriptive statistics: such as the mean and standard deviation of the net income before zakat and taxes, the net income, and the total revenues in order to calculate the coefficient of variation for the net income and total revenues for the period (2014 - 2018) and then calculate

the Eckel index to classify the banks under the study into income smoothing banks and non-income smoothing banks.

B: Statistical methods used for univariate analysis: The study used (chi-square) ( $\chi^2$ ) of independence test and the T-test for differences to identify any significant differences between the two groups of banks (income smoothing and non-income smoothing) for each independent variable separately.

C: Statistical methods used for the multivariate analysis: The study used logistic regression to evaluate and compare independent variables in terms of their effect on the dependent variable.

**The data used in the applied study:** The primary financial data used in applying the Eckel index and testing the study hypotheses for the Sudanese banks under study were collected from the published annual financial statements for the years (2014-2018) that cover the analysis period. The researchers organized the data extracted from these statements to show the following:

A: Actual figures of banks: which include the total revenue/net income before zakat and taxes/net income/tax payments, all of which were extracted from the income statement, in addition to the total assets/total debt/total equity/aid-up capital, all of which were extracted from the statement of financial position.

B: Descriptive data: The interview was used to collect the data related to the effect of the variable of ownership and the variable of management incentive and bonus on the banks that constituted the study sample, due to the lack of availability of these data in the published financial statements.

## HYPOTHESES TESTING

A: Testing the first hypothesis using the Eckel index: *"The Sudanese banks listed in the Khartoum Stock Exchange practice the income smoothing policy."* This study used the Eckel index to classify banks into income smoothing banks and non-income smoothing banks. The following relationship calculated the income smoothing:

$$\frac{\text{The income smoothing coefficient for the bank no. (N)}}{\text{income coefficient of variation for the bank (N)}} = \frac{\text{the revenue coefficient of variation for the bank (N)}}{\text{the revenue coefficient of variation for the bank (N)}}$$

The data on income and revenue were collected for a time series of five years, then the standard deviation and mean of the income and revenues respectively were calculated, and the coefficient of variation for each was determined. Next, the values of the Eckel index were identified as a basis for expressing the income smoothing situation by dividing the income coefficient of variation by the revenue coefficient of variation. The bank was considered one of the banks practising income smoothing if the previous coefficient was  $\leq 1$ , but if the coefficient  $> 1$ , the bank was not considered one of the banks practising income smoothing.

Based on the above, Table 1 shows the classification of banks representing the sample into banks that practice income smoothing and the banks that do not practice income smoothing according to the concept of net income before zakat and taxes. *"The names of the joint stock banks were changed to the letter (A) in order to implement the principle of confidentiality."*

<b>Table 1</b> <b>CLASSIFICATION OF THE BANKS IN THE SAMPLE ACCORDING TO THE NET INCOME BEFORE ZAKAT AND TAXES</b>					
No.	Bank	incomes' coefficient of variation %	revenues' coefficient of variation %	income-smoothing coefficient*	Classification
1	A1	49.14	40.97	1.199	not practicing
2	A2	88.22	45.11	1.955	not practicing
3	A3	25.25	28.86	0.875	practicing
4	A4	56.95	53.63	1.06	not practicing
5	A5	70.29	28.94	2.43	not practicing
6	A6	18.12	25.63	0.707	practicing
7	A7	47.65	39.29	1.213	not practicing
8	A8	24.76	12.57	1.970	not practicing
9	A9	42.63	36.47	1.169	not practicing
10	A10	74.54	31.05	2.400	not practicing
11	A11	91.82	53.07	1.73	not practicing
12	A12	94.95	83.72	1.134	not practicing
13	A13	56.05	27.47	2.04	not practicing
14	A14	54.30	45.80	1.186	not practicing
15	A15	(284.72)	29.51	(9.647)	practicing
16	A16	34.82	28.48	1.223	not practicing
17	A17	21.05	25.21	0.835	practicing
18	A18	91.54	72.94	1.25	not practicing
19	A19	39.74	16.97	2.342	not practicing
20	A20	26.26	26.74	0.982	practicing
Source: Prepared by the researchers based on the data of the sample of banks listed in the Khartoum stock exchange, 2019. *If the income smoothing coefficient is less than or equal to integer 1, then the bank practices income smoothing. If the coefficient is greater than integer 1, then the bank does not practice income smoothing.					

It is clear from the above table that the coefficient of the variation of the net income before zakat and taxes for each of the banks (A1, A2, A4, A5, A7, A8, A9, A10, A11, A12, A13, A14, A16, A18, A19) is greater than the coefficient of variation of the total revenues; hence, the coefficient of income smoothing policy for each bank is greater than integer 1. Therefore, these banks are not classified as practising the income smoothing policy.

On the other hand, the coefficient of variation of net income before zakat and taxes for each of the banks (A3, A6, A15, A17, A20) is less than the coefficient of the variation of the total revenues; hence, the coefficient of income smoothing policy is less than integer 1. Therefore, these banks are classified as practising the income smoothing policy.

Based on the Eckel model for classifying companies into income smoothing and non-income smoothing, Table 2 shows the classification of banks in the sample of the study into banks that are practising income smoothing and banks that are not practising income smoothing, according to the concept of net income.

**Table 2**  
**CLASSIFICATION OF THE BANKS IN THE SAMPLE ACCORDING TO THE NET INCOME CONCEPT**

No.	Bank	income coefficient of variation %	revenue coefficient of variation %	income smoothing coefficient	Classification
1	A1	48.23	40.97	1.177	not practicing
2	A2	88.59	45.11	1.963	not practicing
3	A3	30.60	28.86	1.060	not practicing
4	A4	64.43	53.63	1.203	not practicing
5	A5	77.52	28.94	2.678	not practicing
6	A6	17.75	25.63	0.692	practicing
7	A7	53.47	39.29	1.361	not practicing
8	A8	17.15	12.57	1.364	not practicing
9	A9	38.81	36.47	1.064	not practicing
10	A10	77.86	31.05	2.507	not practicing
11	A11	87.92	53.07	1.657	not practicing
12	A12	31.91	83.72	0.381	practicing
13	A13	56.54	27.47	2.058	not practicing
14	A14	53.19	45.80	1.161	not practicing
15	A15	(182.53)	29.51	(6.185)	practicing
16	A16	15.23	28.48	0.535	practicing
17	A17	16.42	25.21	0.651	practicing
18	A18	94.51	72.94	1.296	not practicing
19	A19	39.74	16.97	2.342	not practicing
20	A20	32.61	26.74	1.220	not practicing

Source: Prepared by the researchers based on the data of the sample of banks listed in the Khartoum stock exchange, 2019.

\*If the income smoothing coefficient is less than or equal to integer 1, then the bank practices income smoothing. If the coefficient is greater than integer 1, then the bank does not practice income smoothing.

It appears from the table above that the net income coefficient of variation for each of the banks (A1, A2, A3, A4, A5, A7, A8, A9, A10, A11, A13, A14, A18, A19, A20) is higher than the total revenue coefficient of variation. Hence, the coefficient of income smoothing policy is greater than integer 1. Therefore, these banks are not classified as banks practising the income smoothing policy.

On the other hand, the coefficient of the variation of the net income for each of the banks (A6, A12, A15, A16, A17) is less than the coefficient of the variation of the total revenues, and so the coefficient of income smoothing policy is less than integer 1. Therefore, these banks are classified as banks practising the income smoothing policy. By using the Eckel index and in light of the concepts used (total revenue, net income before zakat and taxes, and net income), it is clear from the previous analysis of the results of testing the first hypothesis that Sudanese banks practice the income smoothing policy, which reflects the desire of the managements of these banks to show an stable level of income. Accordingly, it is possible to accept the first hypothesis which states that there are Sudanese banks listed in the Khartoum Stock Exchange that practice the income smoothing. As shown in Table 3 below which includes the results of testing the first hypothesis under two levels of income (the net income before zakat and taxes and the net income), the tendency of the managements of Sudanese banks to smooth and stabilize the income under either level is equal to 25% for both levels.

<b>Table 3</b> <b>SUMMARY OF TESTING THE FIRST HYPOTHESIS</b>				
<b>Level of Income</b>	<b>Sample size</b>	<b>Income smoothing banks</b>	<b>Non-income smoothing banks</b>	<b>Smoothing percentage</b>
Net income before zakat and taxes	20	5	15	25%
Net income	20	5	15	25%
Source: Prepared by the researchers based on data of the applied research, 2019				

Based on the above, it appears that the number of Sudanese banks smoothing the income, regardless of the concept used to calculate the smoothing, is (7) out of (20) banks, representing 35% of the banks of the study sample. Therefore, it can be said that the first hypothesis is accepted altogether.

B: Testing the second hypothesis using univariate analysis: *"The costs of economic factors (political and contractual) affect the tendency of the Sudanese banks listed in the Khartoum Stock Exchange to smooth their income."*

Based on the above analysis of the first hypothesis and in preparation for analysing the rest of the hypotheses, the researchers provide some descriptive statistics for the banks under study as shown in the Table 4, due to their importance in clarifying some aspects related to the analysis.

<b>Table 4</b> <b>THE CHARACTERISTICS OF THE BANKS UNDER STUDY</b>			
<b>Indicator</b>	<b>Total of the banks (20)</b>	<b>Income smoothing banks (7)</b>	<b>Non-income smoothing banks (13)</b>
Size of the banks:			
Average of paid-up capital	315822896	179618552.6	136204343.3
Average of total assets	3206917846	1986597981	1220319865
Tax payments (percentage of payments)	29.1%	19%	40.5%
Financing structure (debt ratio)	60.9%	67.9%	52%
Profitability level (return on assets)	2.36%	1.83%	3.23%
Mmanagement incentive and bonus plan			
-Linked to the net annual income	14	6	8
-Not linked to the net annual income	6	1	5
Form of ownership (frequencies):			
-Private	15	6	9
-Government	1	1	0
-Joint (private, government)	4	0	4
Source: Prepared by the researchers based on the data of the applied research, 2019			

Table 4 above shows some of the characteristics of the banks that were studied, after dividing them into income smoothing and non-income smoothing banks for each of the independent variables of the study, namely the size of the bank, tax payments, financing structure, the level of profitability, the form of ownership, and the management incentive and

bonus plan as factors affecting income smoothing. The table shows these data independently of the bases used for expressing the income smoothing situation, namely the net income before zakat and taxes and the net income. To determine whether these differences are substantial and statistically significant or not, the T-test was performed for each of the hypotheses (tax payments, financing structure, profitability level) as quantitative data variables, and a chi-square test ( $\chi^2$ ) was performed for the each of the hypotheses (type of ownership, management incentive and bonus plan) as descriptive data variables. Table 5 shows a summary of the results of conducting the two tests as follows:

<b>Table 5</b> <b>THE RESULTS OF T-TEST AND (<math>\chi^2</math>) TEST FOR THE TWO INDEPENDENT SAMPLES</b>					
Indicator	mean		Value of T-test	Value of ( $\chi^2$ )	significance
	Income smoothing banks	Non-income smoothing banks			
Size of the banks: Size of paid-up capital	179618552	136204343	0.703	-	0.491
Total size of assets	1986597981	1220319864	0.937	-	0.361
Tax payments	0.01958414	0.033347178	1.902	-	*0.047
Financing structure	675.97	568.85	0.617	-	0.545
Profitability level	0.02539	0.04223	1.823	-	*0.049
Form of ownership	-	-	-	5.708	*0.041
Management incentive and bonus plan	-	-	-	4.176	*0.048
Source: Prepared by the researchers based on the data of the applied research, 2019.					
*significant at the level of 0.05					

Below, the researchers provide an analysis of the results of testing the six sub-hypotheses that stem from the second hypothesis as follows:

**The size of the bank:** *"There are statistically significant differences between the size of the Sudanese income smoothing banks and the non-income smoothing banks."* This hypothesis is related to testing the relationship between the bank size and the tendency of the administration to smooth the reported income. This is also divided into two sub-hypotheses:

**The first sub-hypothesis:** The average of paid-up capital: *"There are statistically significant differences between the size of the paid-up capital in the Sudanese income smoothing banks and the non-income smoothing banks."*

From Table 5 above, it is noticed when comparing the significance of the T-test with the significance level of (0.05) that the test significance for the indicator of the size of paid-up capital is equal to (0.491) which is more significant than (0.05), and this indicates that there are no statistically significant differences between the means of this indicator for the two groups of the income smoothing banks and the non-income smoothing banks. This result suggests that there is no statistically significant effect for the size of the bank (measured based on the size of the paid-up capital) on the income smoothing behavior in the Sudanese banks in the study sample. Referring to Table 4 which includes some descriptive statistics, it is noticed that the

average paid-up capital (as a measure of size) in the banks whose income is smoothed is higher than in the banks that do not smooth their income. This result contradicts the prevailing trend in accounting literature on the relationship between the company size and the income smoothing behavior, as it indicates that the larger the size of the company, the higher the tendency of the management to smooth the income due to the desire of the management to avoid the political costs associated with an increase in size.

**The second sub-hypothesis:** The average size of total assets: *"There are statistically significant differences between the average size of total assets in the Sudanese income smoothing banks and the non-income smoothing banks."*

Table 5 shows the effect of the variable of the size of the total assets on the income smoothing behavior. Comparing the significance of T-test with the significance level of (0.05), it was found that the significance of the T-test for the average of the total assets indicator is equal to (0.361) which is higher than (0.05), and this indicates that there are no statistically significant differences between the means of the indicator for the two groups of the income smoothing banks and the non-income smoothing banks. Referring once again to Table (4) which includes some descriptive characteristics, it is noticed that the average value of the paid-up capital and the average value of total assets (as a measure of size) is lower in the banks that do not smooth their income than in the banks that smooth their income. Consequently, this reflects once again that the size has no impact on the income smoothing behaviour of the managements of the Sudanese banks under study.

The bottom line concerning the effect of the absence of the size variable (in the form of paid-up capital or the total size of assets) on smoothing the income in Sudanese banks is that this is can be attributed to the absence of the effect of the administrative costs resulting from the increase in size, which leads to political pressures on banks in terms of practicing social responsibility, improving working conditions, or increasing wages for workers, in addition to other pressures which may reduce the impact of increasing the bank size on the tendency to smooth the reported income at the level of Sudanese banks.

**Tax payments:** There are statistically significant differences between the average ratio of tax payments to the total revenue in the Sudanese income smoothing and non-income smoothing banks.

This hypothesis relates to testing the relationship between the bank's tax payments (measured based on the average ratio of tax payments to total revenue) and the management's tendency to smooth the reported income. A T-test was used to determine whether there are statistically significant differences between the two means of the ratio of tax payments to total revenue for the two groups of the Sudanese income smoothing and non-income smoothing banks at the significance level of (0.05). The results of the test are illustrated in Table (5), where it is observed that when the significance of the T-test is compared to the level of significance of (0.05), the significance of the test of the indicator of average tax payments to total revenues is equal to (0.047) which is less than (0.05). This indicates that there are statistically significant differences between the two means of the indicator for the two groups of the income smoothing and non-income smoothing banks. Referring to Table (4), it is clear that the percentage of tax payments of income smoothing banks (19%) is less than the average percentage of total tax payments of both income smoothing and non-income smoothing banks (29.1%) compared to the percentage of tax payments of the non-income smoothing banks (40.5%), which is undoubtedly higher than the percentage of the total average of tax payments (29.1%). The researchers also noticed an increase in the debt ratio of income smoothing banks (67.9%) compared to non-



income smoothing banks (52%), which may impose pressure on the management to practice the income smoothing policy. Accordingly, there is a statistically significant effect of the tax payments factor on the income smoothing behavior in the Sudanese banks in the study sample. This result is interpreted as reflecting the desire of the Sudanese bank administrations to reduce the tax burden in a way that increases cash flows and to avoid high tax payments by smoothing and stabilizing the reported income and avoiding unexpected fluctuations in bank income.

**Financing structure:** *"There are statistically significant differences in the financing structure between the group of Sudanese income smoothing and the group of Sudanese non-income smoothing banks".*

This hypothesis is related to testing the variable of the financing structure of Sudanese banks in the sample of the study by finding the relationship between the debt-to-equity ratio for income smoothing banks and non-income smoothing banks. A T-test was used to determine the extent of the statistically significant differences between the two means of debt-to-equity ratio for income smoothing and non-income smoothing banks. The test results are shown in Table (5); when comparing the significance of the T-test with the significance level of (0.05), the T-test significance of the debt/equity ratio indicator is equal to (0.545) which is a greater than (0.05), and this indicates that there are no statistically significant differences between the two means of debt/equity ratio for the two groups of income smoothing and non-income smoothing banks. The researchers conclude from this result that the variable of financing structure has no effect on the decision of smoothing the income. Referring to the data in Table 4 which contains the statistical data on the banks of the study sample, it was found that the debt-to-equity ratio is more significant for the income smoothing banks (67.9%) compared to the non-income smoothing banks (52%). By extrapolating these ratios, it was found that they contradict the prevailing assumption that banks with a high debt ratio are more inclined towards the income smoothing behavior. From the researchers' point of view, the result of this study in relation to the variable of the financing structure contradicts the results of previous studies that dealt with the same variable, due to the nature of the component of the financing structure in the banking sector in general, where the ratio of debt-to-equity rises given that the banking sector depends mainly on the funds of others in managing its investment activities. It can also be said that the high debt-to-equity ratio may be an essential indicator in the banking sector of the bank's success in attracting investors' and creditors' funds. Thus, based on these results, from the point of view of the researchers, it is reasonable and acceptable to say that the financing structure does not affect income smoothing behavior.

**Profitability level:** *"There are statistically significant differences on the level of profitability between the group of Sudanese income smoothing banks and the group of Sudanese non-income smoothing banks".*

The interview and the analysis of its data revealed that there is a clear predominance of privately-owned banks, with 75%, compared to the other two types of ownership, namely government ownership and mixed ownership, with 5% and 20% respectively. Furthermore, this high percentage is interpreted as reflecting the state of the Sudanese economic environment that follows the policy of economic liberalization and privatization of various economic sectors, including undoubtedly the banking sector. Regarding the management incentive and bonus, it is linked, in the majority of the banks of the study sample (70%), to the net annual realized profit, while in 30% of the banks in the study sample, the plan of management incentive and bonus is not linked to the net annual realized profit. So, 70% of the sample banks provide incentives and bonuses in the form of a fixed percentage of the annual realized profit, while in 30% of the

sample banks, the incentives and bonuses in the form of a fixed value are not linked to the achieved annual profit, noting that no bank provides incentives and bonuses in the form of equity shares.

**The form of ownership:** *"There is a statistically significant relationship between the form of ownership in the Sudanese income smoothing and non-income smoothing banks".*

The sample banks were distributed into the three forms of ownership: the privately-owned banks were (15) banks distributed into (6) income smoothing banks and (9) non-income smoothing banks, while there was only one government-owned bank which was an income smoothing bank, in addition to (4) jointly-owned banks (private-government), all of which were non-income smoothing. This brings the total to 20 banks. There is evidence that there is a clear predominance of privately-owned banks within the study sample. To show whether there is a statistically significant relationship between the type of bank ownership and income smoothing, a chi-square ( $\chi^2$ ) test was used at the level of the statistical significance of (0.05). Reviewing the data in Table (5) makes it clear that the significance of the chi-square ( $\chi^2$ ) test reached (0.041) which is less than (0.05), and this means that there is a statistically significant relationship between the form of bank ownership and income smoothing; hence, it is concluded that the type of bank ownership affects following an income smoothing behavior. This result can be interpreted by arguing that private banks may not be of great interest to regulatory authorities, and therefore they are not subject to ongoing scrutiny and audit from these authorities, which opens the way for the management to maneuver income between periods in those banks. Also, this ensures the stability of the reported income level and reduces the unexpected fluctuations that may be important for the management in privately-owned banks, as large fluctuations in income may prompt investors to offer their shares for sale as a result of fluctuating profits, which negatively affects the price of their stocks prices in the stock market.

**The management incentive and bonus plan:** *"There is a statistically significant relationship between the variable of the management incentive and bonus plan based on accounting profit and practicing income smoothing in Sudanese banks".*

The sample banks were distributed into two types of management incentive and bonus plans, the first of which is linked to the net realized annual profit and the other one is not linked to the net annual realized profit, as the number of banks in which the plans of management incentive and bonus is linked to the net realized profit is 14 banks distributed into (6) income smoothing banks and (8) non-income smoothing banks. In contrast, the number of banks in which the incentive and bonus plan is not linked to the net annual realized profit is (6) banks, including (5) non-income smoothing banks and (1) income smoothing bank. There is a clear predominance for banks in which the management incentive and bonus plan is linked to the net annual realized profit. To determine whether there is a statistically significant relationship between linking the management incentive and bonus plan to the net annual realized profit in the bank and measure the bank's tendency towards practicing income smoothing, a test like the chi-square ( $\chi^2$ ) was used at the level of statistical significance of (0.05). It was clear from the reviewing of the data in Table (5) that the significance of the chi-square ( $\chi^2$ ) test reached (0.048) which is less than (0.05), and this means that there is a statistically significant relationship between the management incentive and bonus plan and following the income smoothing behavior. This result is explained by arguing that linking the management incentive and bonus plan to the net annual realized profit affects the bank management's practice of income smoothing to maximize or maintain management incentives and bonuses without reduction. This

ensures the stability of the management incentive and bonus plans through avoiding breaching the provisions of the management incentive and bonus contracts.

Table 6 below presents a summary of the results of the univariate statistical test for the group of independent variables under the study as follows:

<b>Table 6</b> <b>A SUMMARY OF THE RESULT OF THE UNIVARIATE STATISTICAL TEST FOR THE GROUP OF INDEPENDENT VARIABLES</b>		
<b>Hypothesis</b>	<b>Significance</b>	<b>Accepting/rejecting hypothesis</b>
Size of the banks:		
• Size of paid-up capital	0.703	rejected
• Total size of assets	0.937	rejected
Tax payments	0.047	Accepted
Financing structure	0.545	rejected
Profitability level	0.049	Accepted
Ownership structure	0.041	Accepted
Management incentive and bonus plan	0.048	Accepted
Source: Prepared by the researchers based on data analysis and hypotheses testing, 2019.		

### MULTIVARIATE ANALYSIS: BINARY LOGISTIC REGRESSION MODEL

The researchers used the binary logistic regression model of the multivariate analysis to demonstrate the relative importance of each independent variable and to show the interaction of the independent variables with each other. It is worth noting that the researchers worked on operating the model according to the method of the phased selection of the variables or what is called the selective model, that is, introducing the variables that have a high interpretative ability in the model, and excluding the variables that do not improve the interpretative ability of the model. Therefore, the variables of tax payments, the level of profitability, the type of ownership, and the management incentive and bonus plan are the variables that may have the ability to improve the interpretative ability of the model based on the results of their significance when using the univariate test. Consequently, the size of the company and financing structure variables were excluded due to their insignificance according to the results of the univariate analysis and, hence, their inability to improve the model's interpretative capacity.

Below, the researchers present the most relevant results of the analysis of the binary logistic regression model as one of the methods of multivariate statistical analysis as follows:

<b>Table 7</b>							
<b>THE PREDICTIVE VARIABLES USED IN THE MODEL</b>							
<b>The predictive variables used in the model</b>							
		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1 <sup>a</sup>	Ownership structure			3.559	2	0.169	
	(1) mixed	24.758	40192.970	0.000	1	1.000	5.65210
	(2) private	4.251	2.253	3.559	1	0.410	70.145
	management incentive and bonus Plan	-2.098	1.425	2.169	1	0.140	8.123
	Tax payments	-74.325	48.528	2.346	1	0.120	15.300
	Profitability level	12.252	29.145	0.177	1	0.674	209370

Source: Prepared by the researchers based on data analysis, 2019.

Table 7 above shows information about the contribution or importance of each of the predictive variables used in the model. The variables that contribute significantly to the predictive ability of the model are the variables whose value appears in the significance column less than 0.05. Looking at Table 8 again, one can find that there are three variables which are significantly less than 0.05 (tax payments 0.012, the plan of incentive and bonus 0.014, the form of ownership 0.041).

<b>Table 8</b>			
<b>SUMMARY</b>			
<b>Step</b>	<b>Log-likelihood</b>	<b>Cox &amp; Snell's R Square</b>	<b>Nagelkerke's R Square</b>
1	13.629	0.488	0.650
a. Estimation terminated at iteration number 20 because maximum iterations have been reached. Final solution cannot be found.			

The percentage (65%) refers to the classification of the banks under study according to the tendency towards income smoothing with an accuracy rate of (65%), which means that factors of tax payment, the management incentive and bonus plan, and the form of ownership can characterize the banks that were studied or those that operate in similar conditions for income smoothing banks and non-income smoothing banks with an accuracy of approximately (65%).

## STUDY FINDINGS AND CONCLUSION

By analyzing the data and testing the hypotheses, the study reached the following results:

1. The income smoothing policy is practiced at the level of Sudanese banks listed in the Khartoum Stock Exchange, regardless of the indicator used to express the condition of income smoothing, whether the income was before zakat and taxes or was the net income.
2. The results of testing the six hypotheses indicated that there are statistically significant differences between the two groups of income smoothing and non-income smoothing Sudanese banks in relation to the factors of tax payments and the level of profitability. However, these significant differences are not present for the factors of the bank size and financing structure. There is also a statistically significant relationship between the management's behavior of the two groups of banks (income smoothing and non-income smoothing banks) towards income smoothing and the factors of the form of ownership and the management incentive and bonus plan. The results of applying the binary logistic regression model indicate that the factor of tax

payments is the most crucial factor motivating the Sudanese bank's management to follow the income smoothing policy, followed by the factor of the management incentive and bonus plan, and then the form of ownership.

3. The results of the binary logistic regression indicated that the factors of tax payments, the management incentive and bonus plan, and the form of ownership could categorize the banks that were studied or that are operating in similar conditions into income smoothing and non-income smoothing banks with an accuracy of up to (65%) approximately.

### STUDY RECOMMENDATIONS:

The study recommends the following:

1. Efforts should be made to reduce the phenomenon of income smoothing in Sudanese banks by making the auditors aware of the methods and policies of income smoothing that can be followed by the management of Sudanese banks to influence the financial statements and business results, and thus influence the decisions of the users of these financial statements.
2. The authorities responsible for organizing and setting accounting standards should reduce the gaps to allow following the income smoothing policy by reducing the alternatives of accounting policies that allow the same event to be treated in different ways. Moreover, it is important to expand the requirements of accounting disclosure.
3. The current study focused on examining whether there is income smoothing or not, in addition to identifying the factors affecting income smoothing at the level of Sudanese banks, but no research was carried out to examine how to smooth income. Therefore, researchers in the accounting field should work in the future on identifying how the Sudanese banks managements smooth income and determine the elements they use to smooth income.

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