



# **APPROPRIATE MODELS FOR MEASURING INTANGIBLE ASSETS AND THEIR IMPACT ON THE CASH FLOWS OF THE ECONOMIC UNIT: AN APPLIED STUDY ON A SAMPLE OF IRAQI ISLAMIC BANKS**

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<b>Received:</b> 8 <sup>th</sup> December 2022 <b>Accepted:</b> 8 <sup>th</sup> January 2023 <b>Published:</b> 13 <sup>th</sup> February 2023	The research aims to address the most important models for measuring intangible assets in a sample of Iraqi Islamic banks, with determining which of these models is more effective in measuring these assets and showing their impact on cash flows in a way that suits the environment of the Islamic banking industry and the accompanying developments and changes, several and successive. The research was applied in a sample of Iraqi Islamic banks, which are the Trust International Islamic Bank, Elaf Islamic Bank and Kurdistan International Islamic Bank for the period (2017-2020). The (Tobin's Q) model was used to measure the tangible assets in these Islamic banks, and the research concluded that the measurement of intangible assets positively affects the cash flows in Islamic banks in a way that suits the changes that accompanied the banking environment.
<b>Keywords:</b> intangible assets, cash flows, Iraqi Islamic banks	

## **INTRODUCTION.**

Knowledge is seen as one of the basic and important elements of the company's capital, so the companies' interest in intangible assets has increased to achieve both wealth and competitive advantage and thus contribute to increasing the market value of companies, as the company's intangible assets are one of the main factors to maintain the competitive advantage and have become Issues related to these assets for many sectors, especially the financial and banking ones, however, many institutions did not care about the development of intangible assets due to problems in measuring and disclosing these assets and showing the impact of these assets on the cash flows of the economic unit during a certain period of time. And that identifying these assets and measuring them in the Iraqi banking environment is an utmost and important necessity, in light of what the banking economic units suffer from intense and intense competition, especially in light of the accompanying developments in the banking environment.

### **The first topic: research methodology**

#### **1-1. Research problem:**

The research problem is represented by the interest of Iraqi Islamic banks in the accounting measurement of intangible assets, and thus not knowing the impact of these assets on the cash flows in these banks. In a manner commensurate with the variables of the banking work environment. ?

#### **1-2. Research objectives:**

The research aims to address the most important models for measuring intangible assets in a sample of Iraqi Islamic banks, with determining which of these models is more effective in measuring these assets and showing their impact on cash flows in a way that suits the environment of the Islamic banking industry and the accompanying developments and changes, several and successive.

#### **1-3. The importance of research:**

The importance of the research came from the importance of intangible assets as one of the strategic resources in the organization, as measuring these assets provides the ability and efficiency that contribute to the success of this organization by achieving its goals effectively and enabling it to develop its strategic options to improve its cash flows, whether financing, operational or investment.

#### **1-4. Research hypothesis:**

The research imposes the following hypothesis: (The measurement of intangible assets helps Iraqi Islamic banks improve their cash flows).

#### **1-5. Research Sample:**

The research sample is represented by three Islamic banks listed on the Iraq Stock Exchange, which are the Trust International Islamic Bank, Elaf Islamic Bank and Kurdistan International Islamic Bank for the period (2017-2020).

#### **The second topic: the theoretical framework of**



## the research

### 2-1- The concept of intangible assets:

Intangible assets are viewed as intellectual property, including intellectual property rights such as trademarks, goodwill, personal and organizational relationships, knowledge, experience, and employee skills in the company (Hall, 2009:59).

Intangible assets are the knowledge that the company possesses and is presented at the individual and organizational levels. At the individual level, it includes individual knowledge, skills, and talent, while the organizational level includes elements such as the specific database for each customer, technology, organizational methods and processes, and other elements. organizational and allow the economic unit to constantly adapt to changing conditions (Mouritsen, 2014: 208).

Intangible assets are assets that are variable and flexible in nature, and when they are discovered and used by the economic unit, they help them achieve a competitive advantage, while some studies dealt with intangible assets only fixed cases, internal factors and future opportunities, meaning that the intangible assets of the institution are represented by applied knowledge to create value for the economic unit from the point of view of its customers and customers (Bontis, 2018:63).

The term intangible assets consists of a wide and large group of ideas and perceptions of the intangible components of assets. Intangible or intellectual capital are synonymous terms to express the same meaning of something (Falzagic, 2005:2).

And there are those who view intangible assets as information-based assets that include technology, customer confidence, brand, corporate culture, and management skills through which the desired goals can be achieved (Itami, 2011:12).

Intangible assets provide the economic unit with the ability and competence that contribute to its success, and enable it to make its strategic choices through the optimal use of intangible assets in light of the opportunities available to it and the external environment surrounding the economic unit, and the interest of the economic unit in identifying intangible assets enables it to conduct an analysis For intangible assets to determine their strengths and weaknesses and thus the economic unit will be able to make its strategic choices (Johanson et al. 2016:410).

### 2-2 Appropriate models for measuring intangible assets:

There are many different models presented by accounting thought to measure intangible assets, which can be explained through the following:

#### 1. The market value of the share model:

This model is based on the idea that intangible assets can be measured by making a comparison between the market value and the book value of the shares of the economic unit. tangible (Stewart, 2005:89).

#### 2. The rate of return on invested capital model:

This model is based on the idea that the rate of return on invested capital for the economic unit is higher than the corresponding economic units, because the intangible assets of the economic unit are not displayed in the financial statements (Rodov & Letiaert, 2012: 329-330).

**3. The Invisible Balance Sheet Model:** This model is based on the fact that intangible assets are represented in the difference between the current value of the net assets of the economic unit and its book value. It also assumes that the value of intangible assets is due to an increase in the value of the assets over their book value (Sveiby, 2014 :8)

**4. Value-added model:** This model is based on the concept of the value chain, as raw materials are transformed into products that are marketed, which results in achieving added value. According to this approach, the productive function is not the only process that takes place when producing the final product of the company (Kristandl & Bontis 2017:1511).

**5. (Tobin's Q) Model:** It is the ratio between the market value of the net assets of the company and the replacement cost or replacement cost of this market value of the net assets of the economic unit, Q. normal return, which indicates the presence of internally generated intangible assets that led to this increase (Osinski, et.al.: 2017:474).

The (Tobin's Q) model is one of the best models for measuring intangible assets because it helps to get rid of one of the defects of the previous models as a result of abandoning the principle of historical cost. In the model such as relevance, reliability, stability, and comparability (Talab, 2019:57).

Intangible assets can be calculated according to this model by relying on the following equation: (Chang & Pruitt, 2014:70)

$$\text{Tobin's } Q = \frac{MVE + PS + DEBT}{TA}$$

whereas:

MVE: closing price multiplied by the number of ordinary shares subscribed.

PS: cash value of preference shares.

DEBT: the value of short-term liabilities minus short-



term assets and plus the book value of long-term liabilities.

TA: book value of total assets.

### **2-3. The impact of measuring intangible assets on cash flows:**

Some researchers believe that intangible assets represent the hidden force that can maintain the stability of the economic unit and its continuity in the labor market, in addition to its growth and development faster than other competitors, through the ability of these assets to generate cash from operational operations and work to meet the needs, desires and requirements. customers and enhance the ability of the economic unit to face other competitors (Orpurt & Zang, 2019: 894).

The cash flows from operating activities are more important than other activities because they show the cash amounts obtained from the activity of the economic unit, which is the best and most important measure of the company's ability to provide the necessary liquidity, and the cash flows from operating activity show the ability of the unit The economy is based on generating cash for the shareholders and creditors of the economic unit during a specified period (Nurnberg, 2016:36).

Intangible assets are assets that contribute significantly to the generation of economic benefits for the economic unit, whether these benefits are currently or in the future, which can help increase net income and thus have a positive impact on operating cash flows that refer to major and ongoing operations (Essys, 2018:126).

Many studies indicated that there is a positive impact relationship between intangible assets and operating cash flows, as the increase in intangible assets leads to an increase in operating cash flows due to the ability of these assets to generate cash for the main and continuous operations of the economic unit during a certain period of time (Stewart, 2007:215).

The intangible assets can significantly affect the cash flows from operating activities through the ability of these assets to generate cash and help in increasing these flows and improving the company's performance, which made the economic units interested in the issue of measuring intangible assets and disclosing them in the financial statements and reports prepared by these units at the end of the accounting period or periods (Nurnberg & Hugo, 2016:

822).

### **The third topic: the applied side of the research 3-1. Research community and sample:**

The number of Islamic banks in Iraq reached (30) Islamic banks, and during this research, a deliberate sample consisting of four banks was chosen for the purpose of conducting the applied side, which are as follows:

**1. Islamic Trust Bank:** The bank was established in 2016 with a capital of (100) billion Iraqi dinars, and the bank aims to employ the available financial resources to achieve the highest returns and profits compared to the realized banking risks, and work to attract deposits and funds from institutions and individuals and achieve continuous growth rates In which .

**2. Elaf Islamic Bank:** The bank was established in 2001 with a capital of (80) billion Iraqi dinars, and the bank aims to practice Islamic, banking and investment activities in accordance with Islamic Sharia and the continuous and serious endeavor to develop banking services through the acquisition of modern systems.

**3. Kurdistan Islamic Bank:** The bank was established in 2005 with a capital of (50) billion Iraqi dinars, and one of the bank's strategic goals is to spread banking services for the purpose of reaching customers and communicating with them through expanding the network of branches and offices and expanding in investment, financing and banking services forms.

### **3-2. Measurement of intangible assets in Islamic banks, the research sample, using the (Tobin's Q) model:**

For the purpose of measuring intangible assets in Islamic banks, the research sample using the (Tobin's Q) model, it is necessary to determine the market value of the shares of these banks (the number of shares multiplied by the market value of one share) in addition to determining the replacement value of their net assets by subtracting depreciation from the total assets. Clarification of the market value of the shares of banks in the research sample for the period from 2017 to 2020 through the following table:

Schedule (1): The market value of the shares of Islamic banks, the research sample

Details	2017	2018	2019	2020	Average
Islamic Trust Bank	9469031425	6740203925	6483119650	10663970625	8339081406
Elaf Islamic Bank	7060482100	6224599150	6411308400	5945971500	6410590288
Kurdistan Islamic Bank	2025077250	1795281250	1824005750	1824005750	1867092500



Average	6184863592	4920028108	4906144600	6144649292	5538921398
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Source: prepared by the researcher based on the annual reports of the Iraqi Stock Exchange.

It is clear from the above table that the average market value of the shares of the Islamic Trust Bank, Elaf Islamic Bank and Kurdistan Islamic Bank during the period (2017-2020) was (8339081406), (6410590288), (1867092500) dinars, respectively, and it is clear that the market value of the banks' shares The research sample was fluctuating during the research years, as the market value of shares changes

continuously with investors trading shares, and it is difficult to predict the actual value because it is affected by the developments of banks and the changes accompanying them.

The replacement value of the assets of the study sample companies, measured by the book value of the assets minus the amounts of depreciation, can be clarified through the following table:

Schedule (2): The replacement value of the assets of Islamic banks, the research sample

Details	2017	2018	2019	2020	Average
Islamic Trust Bank	8690597475	8855763350	9311046675	9809416750	9166706063
Elaf Islamic Bank	11255695325	11482618875	11211172350	13391361900	11835212113
Kurdistan Islamic Bank	2108378300	2374079925	2526319775	2542118250	2387724063
Average	7351557033	7570820717	7682846267	8580965633	7796547413

Source: prepared by the researcher based on the annual reports of the Iraqi Stock Exchange.

It is noted from the above table that the average exchange value of the assets of each of the Islamic Trust Bank, Elaf Islamic Bank and Kurdistan Islamic Bank during the period (2017-2020) was (9166706063), (11835212113), (2387724063) dinars, respectively, and represents the cost of purchasing the asset or what It is equivalent to it in its production capacity in an organized market for used assets. Prices of used assets can be obtained through contacting local and external suppliers, or through offers of companies producing such assets, which undoubtedly include the prices of their products of various machines, as they represent the cost of purchasing a new similar asset with a discount the market value of shares changes continuously with investors trading shares, and it is difficult to predict the actual value because it is affected by the developments of banks and the changes accompanying them.. Its price is in proportion to the difference between the condition of

the original subject of evaluation and the technological progress and advanced production capabilities of the new asset.

After determining the market value of the shares of Islamic banks, the research sample and the replacement value of their assets, the (Tobin's Q) test will be used in order to measure whether there are intangible assets or not, and this model represents the ratio of the market value of the bank's shares to the replacement value of net assets, and the greater this The ratio whenever the matter indicates the existence of intangible assets in the bank, even if the intangible assets are formed internally, and the value of Q can be calculated according to the following equation:

$$Q = \frac{MVE + PS + DEBT}{TA}$$

The (Tobin's Q) test for the research sample banks can be illustrated through the following table:

Schedule (3): Tobin's Q test for Islamic banks, a research sample

Details	2017	2018	2019	2020	Average
Islamic Trust Bank	1.08957	0.76111	0.69628	1.08712	0.90852
Elaf Islamic Bank	0.62728	0.54209	0.57187	0.44402	0.54632
Kurdistan Islamic Bank	0.96049	0.75620	0.72200	0.71751	0.78905
Average	0.89245	0.68647	0.66338	0.74955	0.74796

Source: prepared by the researcher.

It is clear from the above table that the average (Tobin's Q) test for each of the Islamic Trust Bank, Elaf Islamic Bank and Kurdistan Islamic Bank during the period (2017-2020) was (0.90852), (0.54632),

(0.78905) dinars, respectively, as shown by The above table shows that the Islamic Trust Bank has exceeded the (Tobin's Q) test index, which indicates that the bank owns intangible assets, and therefore it can be





said that there is a possibility to measure intangible assets in the research sample banks by dividing the market value of the company's shares by the replacement value of its assets .

### 3-3. Measuring the impact of intangible assets on cash flows in Islamic banks, the research sample:

Before measuring the impact of intangible assets on operating cash flows in the research sample companies, the research variables must be described as follows:

**1. The independent variable:** The independent variable is the intangible assets of the research sample companies, and this variable can be measured using the (Q Tobin) test.

**2. Controlling variables:** Through the extrapolation of previous studies, the controlling variables that may be associated with the net cash

flow of the company during a certain period can be identified, and they are as follows:

**a. Bank size:** This variable is measured by the natural logarithm of the bank's total assets at the end of the fiscal year

**b. Return on Assets Ratio:** It is the ratio of earnings before interest and taxes to total assets.

**c. The ratio of fixed assets to total assets:** It is the ratio of fixed assets of the company to its total assets.

**3. The dependent variable:** The dependent variable is the cash flows in the Islamic banks listed in the Iraq Stock Exchange, and it includes the monetary effects of transactions that are involved in determining the company's net income, and it includes the cash received and paid in cash.

The size of the research sample banks, measured by total assets, for the period from 2017 to 2020 can be clarified through the following table:

Schedule (4): The size of the Islamic banks, the research sample, measured by the total assets

Details	2017	2018	2019	2020	Average
Islamic Trust Bank	8926138375	9091304250	9548023800	10023414275	9397220175
Elaf Islamic Bank	11498417350	11695180175	11561611250	13649882400	12101272794
Kurdistan Islamic Bank	2158646175	2430092700	2579460100	2595258575	2440864388
Average	7527733967	7738859042	7896365050	8756185083	7979785785

Source: Prepared by the researcher based on the published financial statements of the research sample banks.

It is noted from the above table that the average bank size for each of the Islamic Trust Bank, Elaf Islamic Bank and Kurdistan Islamic Bank during the period (2017-2020) was (9397220175), (12101272794), (2440864388) dinars, respectively.

With regard to the second controlling variable, the return on assets ratio of the banks, the research sample, for the period from 2017 to 2020 can be clarified through the following table:

Schedule (5): The rate of return on assets for Islamic banks, the research sample

Details	2017	2018	2019	2020	Average
Islamic Trust Bank	0.90%	0.70%	5.27%	1.22%	2.02%
Elaf Islamic Bank	7.45%	9.23%	10.65%	7.27%	8.65%
Kurdistan Islamic Bank	2.35%	4.56%	0.90%	3.37%	2.79%
Average	3.57%	4.83%	5.61%	3.95%	4.49%

Source: prepared by the researcher based on the published financial statements of the research sample banks.

It is clear from the above table that the average rate of return on assets for each of the Islamic Trust Bank, Elaf Islamic Bank and Kurdistan Islamic Bank during the period (2017-2020) was (2.02%), (8.65%), (2.79%) dinars, respectively, and the table shows Above is the return on assets ratio, which is the ratio of profits before interest and taxes to the total assets of the company. It is noted from this table that there is a clear discrepancy in the performance of these sectors with regard to the return on assets ratio and

its variation from year to year for reasons that may be beyond the control of these companies because they are related the general economic conditions of the country,

With regard to the third controlling variable, which is related to the ratio of fixed assets to total assets, it can be clarified through the following table:

Schedule (6): The ratio of fixed assets to the total assets of Islamic banks, the research sample

Details	2017	2018	2019	2020	Average
Islamic Trust Bank	16.22%	15.89%	28.16%	32.78%	23.26%
Elaf Islamic Bank	8.56%	22.15%	23.34%	49.26%	25.83%



Kurdistan Islamic Bank	34.12%	55.13%	10.78%	19.59%	29.91%
Average	19.63%	31.06%	20.76%	33.88%	26.33%

Source: prepared by the researcher based on the published financial statements of the research sample banks.

It is clear from the above table that the average fixed assets to total assets for each of the Islamic Trust Bank, Elaf Islamic Bank and Kurdistan Islamic Bank during the period (2017-2020) was (23.26%), (25.83%), (29.91%) dinars, respectively, and it is clear Through the above table, there is a variation in the ratio of fixed assets to total assets of the study sample companies during the four years of the

research, where the highest percentage was (55.13%) and the lowest percentage was (8.56%). After characterizing the independent variable and other controlling variables, the dependent variable represented by the net operating cash flow for the period from 2017 to 2020 will be described through the following table:

Schedule (7): Net cash flows of Islamic banks, a research sample

Details	2017	2018	2019	2020	Average
Islamic Trust Bank	4121592225	-10033838750	13260103825	-4615565825	683072868.8
Elaf Islamic Bank	-12750693550	2701418125	3087335000	-18524010000	-6371487606
Kurdistan Islamic Bank	3349758475	9045891550	8227747775	11654689625	8069521856
Average	-1759780950	571156975	8191728867	-3828295400	793702372.9

Source: prepared by the researcher based on the published financial statements of the research sample banks.

It is clear from the above table that the average net cash flows (inflows and outflows) for each of Al-Thiqa Islamic Bank, Elaf Islamic Bank and Kurdistan Islamic Bank during the period (2017-2020) were (683072868.8), (-6371487606), (8069521856) dinars, respectively. .

In order to achieve the objectives of the research and test its hypothesis, the following standard model can be adopted to conduct the standard analysis in a manner that is commensurate with the requirements of the current study, as follows:

$$CF = a_0 + B_1 \text{ Tobin's } Q + B_2 \text{ Size} + B_3 \text{ ROA} + B_4 \text{ FA on TA} + e$$

Where: CF: cash flows. Tobin's Q: The independent variable for intangible assets as measured by the (Tobin's Q) model. Size: the independent variable of the size of the company measured by total assets. ROA: the independent variable of return on assets measured as the ratio of earnings before interest and taxes to total assets. FA on TA: the independent variable for the ratio of fixed assets to total assets.  $a_0$ : the fixed section.  $B_1, B_2, \dots, B_n$ : the parameters that have been estimated.  $e$ : random error limit. After defining the study model, the descriptive statistics will be explained through the following table:

Schedule (8): Descriptive statistics for search variables

variants	number of observations	lowest value	highest value	arithmetic mean	standard deviation
Intangible assets	12	0.44402	1.08957	0.747961667	0.204881783
bank size	12	2158646175	13649882400	7979785785	4293469118
The rate of return on assets	12	0.007	0.1065	0.044891667	0.034926376
The ratio of fixed assets to total assets	12	0.0856	0.5513	0.263316667	0.144646326
total cash flows	12	18524010000-	13260103825	793702372.9	10119130270

Source: prepared by the researcher based on the statistical program (SPSS-26).

It is clear from the above table that the number of observations for all variables was (12) observations, where the arithmetic mean of the intangible assets variable expressed by (Q Tobin) test was (0.747961667) with a standard deviation of (0.204881783), either the arithmetic mean for the variable of company size measured by the total Assets amounted to (7979785785) with a standard deviation of (4293469118), and the arithmetic mean of the variable return on assets ratio amounted to

(0.044891667) with a standard deviation of (0.034926376), and the arithmetic mean of the variable ratio of fixed assets to total assets amounted to (0.263316667) with a standard deviation (0.263316667). 0.144646326), as for the arithmetic mean of the total operating cash flow variable, it amounted to (793702372.9) with a standard deviation of (10119130270).

The research hypothesis can be tested by using the standard model that was referred to previously and as

shown in the following table:

Schedule (9): The results of testing the research hypothesis

independent variables	Model Summary		Analysis of Variance (ANOVA)			Coefficients		
	R	R <sup>2</sup>	F	Sig.F	dependent variable	$\beta_i$	T	Sig.T
Intangible assets	<b>0.725</b>	0.526	<b>6.452</b>	<b>0.050</b>	Cash flow	<b>4.115</b>	<b>2.127</b>	<b>0.050</b>
bank size	<b>0.612</b>	0.375	<b>5.673</b>	<b>0.050</b>		<b>3.892</b>	<b>2.892</b>	<b>0.050</b>
The rate of return on assets	<b>0.884</b>	0.781	<b>6.519</b>	<b>0.050</b>		<b>4.007</b>	<b>3.109</b>	<b>0.050</b>
ratio of fixed assets to total assets	<b>0.507</b>	0.257	<b>5.242</b>	<b>0.050</b>		<b>3.437</b>	<b>2.606</b>	<b>0.050</b>

Source: prepared by the researcher based on the statistical program (SPSS-26).

Through the above table, it is noted that the value of the correlation coefficient R between intangible assets and net operating cash flows amounted to (0.725), and this indicates that the relationship between these two variables is a direct correlation, and the value of the determination coefficient R<sup>2</sup> was (0.526), and this explains its value (0.526). 5% of the variation in net cash flows, as the value of F reached (6.452) at the level of (0.05), and this confirms the significance of the decline. Thus, an increase in intangible assets by (1%) will lead to an increase in cash flows by (4.115%).

#### **The fourth topic: conclusions and recommendations**

##### **4-1. Conclusions:**

1. The intangible assets are the knowledge that the company possesses and is presented at the level of individual knowledge, skills and talent, and at the organizational level as the specific database for each customer, technology, methods, organizational processes, etc.
2. The term intangible assets consists of a wide and large group of ideas and perceptions of the intangible components of assets, and the terms intangible assets or intellectual capital are often used synonymously.
3. The (Tobin's Q) model is one of the best models for measuring intangible assets because it is characterized by simplicity and ease and does not need complex accounts that confuse the accounting work within the company, in addition to the availability of some qualitative characteristics of accounting information in the model such as relevance, reliability, stability and comparability.
4. The importance of intangible assets stems from the fact that they provide the company with the ability and efficiency that contribute to its success, and enable it to make its strategic choices through the optimal use of these assets.
5. The measurement of intangible assets positively affects cash flows in Islamic banks in a

manner that is appropriate to the changes that accompanied the banking work environment.

##### **4-2. Recommendations:**

1. The interest of Iraqi Islamic banks in measuring intangible assets and disclosing these assets in the quarterly and annual reports prepared by these companies in order to increase the market value as well as improve the competitive advantage of these banks.
2. Evaluating intangible assets continuously from one period to another, with the need to take action and measures that will improve the bank's net cash flows.
3. Preparing a statement of cash flows and determining the net flows from operating activities, investment activities and financing activities, as well as determining the net cash flow during the period by summing up the net cash flows of the three activities contained in the cash flow statement.
4. Do not neglect the internally formed intangible assets in terms of accounting measurement and disclosure, because these assets are considered among the important assets through which the impact on cash flows in economic units can be shown during a specific period.
5. Continuously evaluating intangible assets and determining the impact of these assets on each of the cash flows generated from operating activities in a way that can help provide information that serves management and other users in making their various decisions.

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