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EFFECT OF MEASURING INTELLECTUAL CAPITAL ON INVESTMENT

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Abstract:

The concept of intellectual capital is one of the relatively recent concepts, and the measurement of intellectual capital is complex because it is intangible and not disclosed in the financial statements (financial accounting outputs), while the measurement of investment for assets depends on its measurement on the financial statements. In this research Intellectual capital and its impact on investment were measured, and the research included a sample of companies listed in the Iraq Stock Exchange and for a number of sectors. According to Excel program, the results show that there is a positive relationship between intellectual capital and investment.

Keywords: Intellectual Capital, Measuring Intellectual Capital, Investment

1. INTRODUCTION

The term intellectual capital appeared in the last decades of the twentieth century, and this term began to take its reflections on all branches of the economy from the side of management and accounting, and some accountants believe that accounting theory must change according to the changes surrounding it to be able to integrate and adapt to the changes occurring in the economic and market environment. The importance of intellectual capital in achieving profits is in the availability of human capital and its best use to achieve profits. In terms of organizational capital, it is the ability of the company to compete and maintain the competitive advantage, and by preserving the competitive advantage, it achieves profits, and finally the relational capital, which is Increasing the company's external relations to increase the company's profits, and the optimal investment of the company's resources and achieving the highest profits depends on what the companies own of intellectual capital, and by investing it in the optimal investment, the company achieves an acceptable rate of return on investment. The research problem is how to measure and display accounting information about capital Intellectual and its impact on enhancing the attraction of prospective investors, and investments are a pillar for the economies of developing countries, including Susa, and that its weakness will lead to slow growth in it, and Iraq suffers from weak investments, and there are multiple reasons for that, and the current research will focus on the role of intellectual capital in promoting investments in Iraq, and the research problem can be clarified through the following question: Does Ras Intellectual money in promoting investment, and the research hypothesis was based on whether there is an impact of intellectual capital on investment, the research was divided into three axes, intellectual capital, methods of measuring intellectual capital and presenting them in accounting, testing hypotheses by analyzing a selection of companies listed on the market Iraq Securities The research sample consisted of eleven companies for a period of ten years, and finally the conclusion.

2. INTELLECTUAL CAPITAL

It should be noted that the first economist to use the term intellectual capital is Galbraith in 1969, and the first research writer on the subject of intellectual capital is Stewart in 1991 and describes intellectual capital as patent, administrative skills, technology operations, information about customers, suppliers and accumulated experience, and Stewart divides Intellectual capital refers to human capital, organizational capital, and relational capital (Stewart,

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1991:45), Davenport & Prusak defines intellectual capital as an intellectual substance that gave formal form to the production of high-value assets (Davenport & Prusak, 1994:103), Hamel & Heene also defined intellectual capital as an individual ability that distinguishes the company from its competitors and is formed from the synergy of different skills and achieves increased value provided to buyers and is a source of competitive advantage (Hamel & Heene, 1994: 1), and Webster defined intellectual capital as the characteristic of transformational leaders. And their ability to transform the technology from research into a successful industry, thereby achieving the survival of the company in the competitive market for long periods (Webster, 1995:136), while Spender sees intellectual capital as a rare group of workers who They have knowledge in dismantling the structure of the black box of productive work into its initial components, and they can reproduce it in a distinct way (Spender, 1996: 46), and Youndt, M. A, believes that intellectual capital is realized skills possessed by some individuals working in the company and enables them to present intellectual innovations that enable The company is able to increase its productivity and achieve excellent performance compared to similar companies (Youndt, M.A., 1996:837), in addition to that Edvinsson defines intellectual capital as intellectual assets whose value exceeds other assets that appear in the balance sheet, as these assets consist of two types, human and structural. As for the human being, it is the source of innovation and renewal, and the structural one is the supporter of the first in terms of information systems, market channels and customer relations (Edvinsson, 1997:19), The economy at the present time differs from the economy in earlier periods (Stewart, 1997:21), and Endres went to that intellectual capital is the intellectual assets that include the power to transform technology from research To distinguished manufacturing, which is a key indicator of the company's long-term success in local and international competition (Endres, 1997:96), customer needs (OLrich, 1998: 126), and Dzinkowski also believes that intellectual capital is the company's intellectual assets that represent the hidden value inherent between the book value and the market value of the company and carries within it a wide range of things such as intellectual property such as patents, copyrights, and intellectual assets (Dzinkowski, 1999: 21), and the authors Nahapiet & Ghoshal indicate that intellectual capital is the acceptance of knowledge and science in society such as the company or the intellectual community and professional application that enables the individual to work with approved modern methods, (Nahapiet & Ghoshal, 1998: 244), Yogesh defined intellectual capital as a unified intellectual force that constitutes a mixture of knowledge, intellectual features and experience that represent the main raw materials for today's economies (Yogesh, 1998:8), while Hansen defined intellectual capital as a competitive asset that carries out the process of creative and strategic research and development that is based on innovation. And renewal, which is the path leading to the company's survival in a rapidly changing work environment (Hansen, 1999: 106), and Daft considers intellectual capital as a set of media resources (from people) including two types of knowledge, explicit knowledge written easily so that it can be transferred to Others in the form of documents within the knowledge that is based on personal experiences and clear rules used in the development of the organization (Daft, 2001: 258), conclude Roos, Bainbridge and Jacobsen that there is a synergy in the components of intellectual capital that creates wealth and competitive advantage for the company, and look at the expenses In intellectual capital, it is an investment in the company's future growth (Roos, Bainbridge and Jacobsen, 2001:22), Meritum defines simple intellectual capital as a combination of human, organizational and financial resources. Relational of the organization, and the division of intellectual capital into three parts: human capital, which is the knowledge that exists or is acquired by employees, organizational capital, which is the knowledge that remains within the company, and relational capital is defined as all the resources associated with the external relations of the company (MERITUM, 2001:3), and Eppler defines Intellectual capital plays a complementary role in knowledge management, and this role is embodied in the effective contribution to organizational development and competitive advantage through effective management of intellectual resources (Eppler 2003: 191), To Roos, Pike and Fernstorm, they define intellectual capital as all the non-monetary and intangible resources that are controlled by the organization in whole or in part and create value for it. (Roos, Pike and Fernstorm, 2005:494), Jurczak describes intellectual capital as linking all tangible or intangible knowledge resources, tangible or intangible, that the organization disposes of to create value for it in order to gain a competitive advantage for the organization in the long term. The main components of intellectual capital are: human capital, which is the capital of efficiency of workers and the intellectual agility of all members of the organization and their ability to make decisions and solve problems, and structural or organizational capital is management style, intellectual property, databases, computer equipment, and organizational culture, while relational capital is the relationship between customers, strategic partners and investors. (Jolanta

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Jurczak, 2008:38), the researchers believe that intellectual capital can be defined as all tangible and intangible knowledge resources generated internally or obtained by the company through a merger that enables it to achieve a competitive advantage for this company and has the ability to continue activity and maintain its internal customers. And external and have the ability to face crises and economic changes.

3. THE IMPORTANCE OF INTELLECTUAL CAPITAL

The importance of intellectual capital lies in the fact that it is one of the most important factors influencing the success of companies. The statement of the special mechanism for measuring intellectual capital gives an important indicator for investors to facilitate the investment decision, as the real value of the company is its intellectual capital, or its intangible assets, and for intellectual capital we find meaning Linguistic and idiomatic meaning, we find the word thought taken from two words: inter, which means between and implicitly, meaning relations, and lectio, meaning knowledge. By adding capital, it is the intellectual capital that refers to the concept of intensive relationships based on synthetic knowledge and competencies that have the ability to generate value and development (Al-Maaita, 2009: 35), The business environment witnessed an exponential increase in the number of companies that have intellectual capital in the form of knowledge, trademarks, patents, customer relations, human capital, research and development, and trademarks (Roslender, 2000:35), The value of commercial activity, however, the value in these assets remains hidden and not visible in the financial records of organizations, and intellectual capital is classified as consisting of human, structural and relational, and for this reason some stand behind the non-recognition of intellectual capital, which is that these terms are not recognized within the assets Intangible (Abeysekera, 2003: 9), and intellectual capital is considered the main weapon of the company in the world of economy today because intellectual assets represent the hidden force that enhances the continued survival of the company (Koenig, 2000: 1), and this is what Stewart refers to, indicating that two-thirds of registered companies In the list of rich companies, which numbered 511 companies in the year 1954 AD, they disappeared or were they considered to be rich companies to the extent that they did not celebrate the fortieth anniversary of their founding (Stewart 1997: 2), and for the period from 1979 AD to 1994 AD The number of people investing in the largest American companies began to decrease by a third from 16.2 million to 11.6 million, and these companies were replaced by small companies that rely more on knowledge assets than on other physical assets. The simplest example of this is the NIKE shoe company that does not manufacture shoes and its work is limited to research Development, development, design, marketing, and provision of knowledge services thus achieved $334,000 in sales per employee, compared to $248,000 in sales per employee in wealthy companies (Obeid 2014), Intellectual capital in the company reflects its competitive advantage (Vij, 1999: 3), Learning Director at Shell Petroleum Company, by saying: "We are committed to becoming a learning organization and we believe that the competitive advantage lies in the ability of users to learn faster." On this basis, Gemini Consulting, which specializes in re-engineering power plants, spends three to six months in consultation because it believes that Participation in intellectual capital is a competitive advantage, and Jim Noble says, "We talk about competition through competence, and competence is knowledge (Jeffers, 1997: 1), Intellectual capital represents a buried treasure that needs someone to extract it for existence and use it (Al-Anazi 2001), and one of the methods of extracting it is spreading knowledge (Webster 1995: 2), and Stewart supports this by saying, "The thought in the organization becomes intellectual capital when it can be deployed to do something that cannot be It is conducted because the intellectual capital contains useful knowledge" (Bown, 1998: 2), They do not convert knowledge into capital in their companies and do not enhance the mental capabilities that build and maintain work (Bown, 1998: 2), Intellectual capital is a source for creating and developing the value of the company and individuals. The additive derives from knowledge, and the Imperial Bank (CIBC) concludes that intangible assets such as Microsoft knowledge programs are better at credit risk than tangible assets such as Texas shopping buildings (Stewart, 1994:69-70), and intellectual capital has the ability fanciful to create The value is through the registration of patents, and this was confirmed by the Intellectual Capital Management Conference (ICM) that was held in New York in June 2001 AD. The most important thing that was said in it is that (IBM) receives more than one billion dollars annually as a return for patents. Recent developments in technology, specifically in information and communication technology, which are closely related to all fields, and which forced institutions to deal with them and increase investment in intellectual capital that is in line with these developments (Koenig, 2000: 1), the strategic orientation in the cognitive and behavioral skills of accounting, which It is part of the overall strategy of the company, its essence lies in stability and knowledge growth, and the basic role of

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knowledge either as a strategic thought or as a competitive advantage because companies are in a changing competitive environment and it can be said that any company is unable to survive and grow without excellence in strategy and knowledge of any ability for Reaching new visions, methods and products, and reducing and mitigating risks and crises. Professional and creative style and behavior dominates. Therefore, the most important motives for the strategic direction of cognitive and behavioral skills in accounting are economic crises and collapses, globalization, changes and the great development in information technology in the business environment, differences in accounting practices at the level International, and finally knowledge management, a strategy for activities Accounting to achieve competitive advantage, there is no doubt that the most important goals of accounting is the measurement and disclosure of assets and liabilities, however, we must understand that creating customer value and a sustainable competitive advantage depends on the company's strategy, and that accounting for intellectual capital helps assess and manage risks and predict economic crises Which helps in hedging and reducing the impact of losses and thus leads to the generation of real value for the company, and from the above it is possible to shift towards a strategic vision of accounting behavior and accounting can be considered as a source of strategic thinking and planning and the advantage of sustainable competitive advantage, there is no doubt that control and management of problems surrounding the business environment most of them fall Responsible for accounting knowledge, tools and concepts, and the accountant has become one of the most important pillars of the company, not only in the design of accounting systems, but has become essential in shaping the company's strategy, intellectual capital as a competitive advantage, competitive advantages such as low production costs, high quality, fast delivery, flexibility, response to changes (Bollinger et al. 2001:12-13).

4. METHODS OF MEASURING INTELLECTUAL CAPITAL AND PRESENTING THEM ACCOUNTING

Intellectual capital assets are strategic resources that should be properly managed in order to derive maximum benefits from them, and these assets help management in measuring and disclosing them and measuring the benefits gained through them (HOLMEN, J. 2005:2), the value of owning intellectual capital is the purposes The internal and external of these assets and how to deal with them. On the one hand, the internal purposes are that the thrust of measuring intellectual capital is the company's management of its resources in a more effective manner and will thus lead to a reduction in costs. On the one hand, the external purposes, the measurement of intellectual capital is to verify the information that indicates the expected growth of the company for the current investors. and potential and other external users of accounting information and from measuring intellectual capital both internally and externally involves the use of financial and non-financial measures (Hunter, Webster & Wyatt, 2005:3).

Models for measuring financial intellectual capital: The current financial measures used to assess the market value of the asset are the title of the financial contribution provided through intellectual capital. economic value added, value chain, market ratio to book value, capital asset, price models, these financial techniques are used to measure the market value of a company for various purposes and set the value of the company and the resulting value is shared and disclosed in the financial statements (Olsen, Halliwell & Gray 2007 2), the value determined using some of the above models that involve a certain degree of objectivity, and some of these models involve estimates such as the cost of capital and the rate of ownership, so these models are not suitable for use to determine the value of annual financial information, and the Accounting Standards Board encourages objectivity as well Verifiable reliable measurement and disclosure (truthful representation) in order to enhance comparability between companies (IASB, 2010: 9-16).

Non-financial models for measuring intellectual capital: Due to the difficulties in finding appropriate financial measures to measure the value of intellectual capital, some researchers have developed non-financial measures to measure intellectual capital, such as Robert Kaplan, David Norton, and Lev-Advinson (Starovic, CIMA & Marr, 2005: 8-11), Such as the balanced scorecard In order to achieve a balance between the need to report these assets and the challenges involved in measurement. Accordingly, the information obtained using these non-financial measures complements the information disclosed in the financial information. Non-financial models relate to measurement Some categories of intellectual capital, making it easy to report the value related to each category, measures that have been developed include the Balanced Scorecard, Skandia, Series Scorecards, Human Capital Accounting, effective non-financial measures of intellectual capital that are integrated with financial measures that It provides feedback to actions and information to develop new strategies and help in various courses of action, and financial and non-financial measures in intellectual

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capital provide assistance to investors. potential and other stakeholders (Holmen, J. 2005:2).

Recognition of intellectual capital: the cost of an item is recognized and disclosed in the annual financial statements, whether in the statement of comprehensive income or in the statement of financial position on the basis of the minimum requirements set by the International Accounting Standards Board for the presentation of financial information, the cost of acquisition (IASB, 2010: A46-A49) .

5. A COMPARISON BETWEEN INTELLECTUAL CAPITAL AND INTANGIBLE ASSETS

There is no legislative text in developing the theory of intellectual capital and does not define its essence. This is due to the fact that this term is mostly used by human resource managers and marketing experts to create a clear picture of the company or financiers to evaluate business companies. Moreover, most scholars consider intellectual capital thinking in accounting as the sum of assets The intangibles of the company and based on this methodology, there are three approaches in accounting to determine their nature as in this table:

Page No. (1) The nature of the intellectual capital Approach

intangible assets	The term intangible assets is more comprehensive than intellectual capital	The term intangible assets is equivalent to intellectual capital	The term intellectual capital is more comprehensive than intangible assets
	<	=	>
	First approach	Second approach	Third approach
			Intellectual Capital

The table is prepared by the researcher

(Petty, 2000; Joia, 2000; Bagrinovskiy, 2001), describe intellectual capital is part of a company's intangible assets. Some see (Edvinsson, 1997; Brooking, 1996; BRÄNNSTRÖM & GIULIANI, 2009) Intangible assets are identical and equal to intellectual capital.

As for (Albert, 1996; Kozyrev, 2003), they acknowledge and realize that intellectual capital is more comprehensive and broader than intangible assets.

From the foregoing, the researcher agrees with the third approach because intellectual capital includes a broader range of resources rather than intangible assets.

6. MEASUREMENT OF INTELLECTUAL CAPITAL:

The researcher relied on the formula (marked as ΔIC) and part of the IC is not disclosed on the assets side of the balance sheet according to (Andriessen, 2004, p.340).

1. ΔIC = Mc – E

Where:

MC represents the market capitalization (calculated by multiplying the number of shares by the market value per share).

E represents the return to the shareholders of the company (net assets).

IC represents the intellectual capital of ΔIC which is not disclosed in the balance sheet, consisting of (Hc) human capital, (Sc) structural (organizational) capital, and (Rc) relational capital.

2. E = AS-L-Nci

Where:

AS represents the book value of the assets disclosed in the balance sheet.

L represents the total liabilities (short term and long term).

NCI represents the interests of the non-controlling (minority) external shareholders in the subsidiaries.

7. HYPOTHESIS TESTING:

A measure (marked as ΔIC) was chosen (Andriessen, 2004, p.340), and the rate of return on investment model was used to calculate the investment.

1.7. Study hypotheses:

Null hypothesis (H0): There is no effect and relationship of measuring intellectual capital on investment.

Alternative hypothesis (H1): There is an effect of measuring intellectual capital on investment.

To test the above hypotheses, the following is required:

2.7. Measurement of intellectual capital:

Step one: Find MC's market value

(Calculated by multiplying the number of shares by the market value per share).

(calculated by multiplying number of shares and market share price)

The calculation of the market value was as shown in the following table:

Schedule (1) The market value of the research sample companies (amounts in millions of dinars)

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Companies											Co. Name / Years
Bagdad Drinks	Al-Mansour Pharmaceuticals	Khaleej Bank	Investment Bank	Al-Ameen Assurance	Al-Khaleej Assurance	Al-Watania for Investment	Al-Ameen Reaestate	Al-Ahliah Agr.	Zain	Asiacell	
198170	2976	71726	100000	1240	2380	38880	20254	546	2949960	5667552	2012
397670	4464	242500	150350	2380	1660	40408	6960	633	3091785	4349893	2013
300580	4140	270000	250000	4770	1560	87490	4872	633	10960398	3056536	2014
391020	3752	153000	170000	3342	940	48938	3132	650	5690624	2219600	2015
332500	3299	135000	150000	3240	1240	53152	4176	702	5965091	1968500	2016
475253	3429	117000	105000	2788	1360	40646	3480	690	5946794	1627500	2017
636627	3170	57000	70000	1795	1500	43772	5777	690	5214881	2325000	2018
583427	4658	42000	67500	3208	1420	56904	4733	633	4574457	2635000	2019
735933	7052	42000	57500	3399	1400	48525	4872	644	4299989	2266100	2020
878642	21415	45000	75000	3705	4620	54090	10440	541	4208500	2321900	2021
492982	5835	117523	119535	2987	1808	51280	6870	636	5290248	2843758	Mean
212408	5599	83573	60582	999	1054	14176	5146	55	2265107	1240124	Standard Deviation

Source: prepared by the researcher based on the financial statements of the research sample companies and computer results

Step 2: Find E attributable to the company's shareholders (net assets)

This is done by substituting in the following equation:

E=AS-Nci-L

Where:

AS represents the book value of the assets disclosed in the balance sheet.

L represents the total liabilities (short term and long term).

NCI represents the interests of the non-controlling (minority) external shareholders in the subsidiaries.

The E account returned to the shareholders of the company was as shown in the following table:

Table (2) Calculating the return to the shareholders of the research sample companies (amounts in millions of dinars)

Companies	Co. Name

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Bagdad Drinks	Al-Mansour Pharmaceuticals	Khaleej Bank	Investment Bank	Al-Ameen Assurance	Al-Khaleej Assurance	Al-Watania for Investment	Al-Ameen Reaestate	Al-Ahliah Agr.	Zain	Asiacell	Years
167196	3894	149088	120375	2677	2161	6262	6943	206	1719932	-693935	2012
175717	7394	303984	186357	3541	2194	7453	6846	196	-467083	-822718	2013
189327	7722	345974	283749	3902	1931	7329	6802	218	-660133	-1415993	2014
216680	7549	321626	281262	3953	1908	7943	6625	271	2271919	-1350329	2015
237407	7527	317734	289793	4065	1957	10758	5778	295	2072355	-1262772	2016
306646	7577	320887	283083	3989	2631	13560	6094	323	2108516	-1429643	2017
333080	7667	314473	283102	4012	2513	14290	6567	327	2147023	-1469633	2018
366178	5511	306709	260626	4040	2361	13733	6453	348	1958556	-1510651	2019
427225	5047	307172	265274	4228	2366	15705	7093	336	2443540	-2111585	2020
500090	10167	304326	263138	4537	7505	17848	7358	369	2398212	-1141009	2021
291955	7006	299197	251676	3894	2753	11488	6656	289	1599284	-1320827	Mean
114156	1756	54202	55009	495	1688	4074	467	63	1159746	391869	Standard Deviation

Source: prepared by the researcher based on the financial statements of the research sample companies and computer results

Step Three: Find Intellectual Capital

This is done by substituting in the following equation:

$\Delta IC = Mc - E$

The intellectual capital account was as shown in the following table:

Table (3) Intellectual capital account for research sample companies (amounts in millions of dinars)

Companies											Company Name / Years
Bagdad Drinks	Al-Mansour Pharmaceuticals	Khaleej Bank	Investment Bank	Al-Ameen Assurance	Al-Khaleej Assurance	Al-Watania for Investment	Al-Ameen Reaestate	Al-Ahliah Agr.	Zain	Asiacell	
30974	-918	-77362	-20375	-1437	219	32618	13310	340	1230028	6361487	2012
221953	-2930	-61484	-36007	-1161	-534	32956	114	436	3558868	5172611	2013
111253	-3582	-75974	-33749	868	-371	80161	-1930	415	11620531	4472529	2014

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174340	-3797	-168626	-111262	-611	-968	40995	-3493	379	3418705	3569929	2015
95093	-4227	-182734	-139793	-826	-717	42394	-1602	407	3892736	3231272	2016
168607	-4148	-203887	-178083	-1201	-1271	27086	-2614	367	3838278	3057143	2017
303547	-4497	-257473	-213102	-2217	-1013	29482	-790	363	3067858	3794633	2018
217248	-854	-264709	-193126	-831	-941	43170	-1720	285	2615901	4145651	2019
308708	2004	-265172	-207774	-828	-966	32820	-2221	308	1856449	4377685	2020
378552	11248	-259326	-188138	-832	-2885	36242	3082	171	1810288	3462909	2021
201028	-1170	-181675	-132141	-908	-945	39792	214	347	3690964	4164585	Mean
107644	4825	83537	76847	775	801	15189	4945	78	2935125	1003518	Standard Deviation

Source: prepared by the researcher based on the financial statements of the research sample companies and computer results

3.7. Measuring the rate of return on investment:

To measure the rate of return on investment, we use the following equation:

ROA= (Net Iincom)/(Total Assets)

The calculation of the rate of return on investment was as shown in the following table:

Table (4) Calculating the rate of return on investment for research sample companies

Companies											Co. Name / Years
Bagdad Drinks	Al-Mansour Pharmaceuticals	Khaleej Bank	Investment Bank	Al-Ameen Assurance	Al-Khaleej Assurance	Al-Watania for Investment	Al-Ameen Real-estate	Al-Ahliah Agr.	Zain	Asiacell	
0.1124	0.0730	0.0856	0.0000	0.1094	0.0066	0.1990	-0.0024	0.0317	0.1226	0.2340	2012
0.1275	0.0381	0.0717	0.0001	0.2046	0.0112	0.1484	-0.0142	-0.0445	0.1056	0.1934	2013
0.1116	0.0491	0.0524	0.0001	0.1172	0.0878	0.0997	-0.0068	0.0870	0.0881	0.0956	2014
0.1328	0.0634	0.0172	0.0000	0.0869	0.0318	0.0379	-0.0144	0.1705	0.0380	0.0154	2015
0.1433	-0.0023	0.0087	0.0000	0.0475	0.0315	0.0645	-0.0152	0.0686	-0.0025	0.0087	2016
0.1305	0.0240	0.0084	0.0000	-0.0187	0.0044	0.0309	0.0296	0.0854	0.0098	0.0120	2017
0.1399	0.0090	0.0016	0.0006	0.0256	0.0022	0.0764	0.0472	0.0394	0.0240	0.0495	2018
0.1418	-0.2821	-0.0072	0.0000	0.0062	0.0038	0.0894	0.0133	0.0538	0.0285	0.0593	2019
0.1438	-0.0516	0.0002	0.0097	0.0318	0.0053	0.1024	0.0131	0.0135	0.0265	0.0715	2020
0.1076	-0.0349	-0.0094	0.0017	0.0736	0.0043	0.1172	0.0114	-0.0220	0.0161	0.1263	2021

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0.1291	-0.0114	0.0229	0.0012	0.0684	0.0189	0.0966	0.0061	0.0483	0.0457	0.0866	Mean
0.0140	0.1033	0.0342	0.0030	0.0650	0.0267	0.0504	0.0208	0.0609	0.0434	0.0774	Standard Deviation

Source: prepared by the researchers based on the financial statements of the research sample companies and computer results.

4.7. Comparison of rate of return on investment with intellectual capital:

For the purpose of proving the hypotheses of the study, we compare the intellectual capital with the rate of return on investment in the following two tables:

Table (5) Comparing the rate of return on investment with the intellectual capital of the research sample companies (amounts in millions of dinars)

Companies												Company Name / Years
Khaleej Bank **ΔIC**	Khaleej Bank ROA	Al-Watania for Investment **ΔIC**	Al-Watania for Investment ROA	Al-Ameen Real-estate **ΔIC**	Al-Ameen Real-estate ROA	Al-Ahliah Agr. **ΔIC**	Al-Ahliah Agr. ROA	Zain **ΔIC**	Zain ROA	Asiacell **ΔIC**	Asiacell ROA	
219	0.0066	32618	0.1990	13310	-0.0024	340	0.0317	1230028	0.1226	6361487	0.2340	2012
-534	0.0112	32956	0.1484	114	-0.0142	436	-0.0445	3558868	0.1056	5172611	0.1934	2013
-371	0.0878	80161	0.0997	-1930	-0.0068	415	0.0870	11620531	0.0881	4472529	0.0956	2014
-968	0.0318	40995	0.0379	-3493	-0.0144	379	0.1705	3418705	0.0380	3569929	0.0154	2015
-717	0.0315	42394	0.0645	-1602	-0.0152	407	0.0686	3892736	-0.0025	3231272	0.0087	2016
-1271	0.0044	27086	0.0309	-2614	0.0296	367	0.0854	3838278	0.0098	3057143	0.0120	2017
-1013	0.0022	29482	0.0764	-790	0.0472	363	0.0394	3067858	0.0240	3794633	0.0495	2018
-941	0.0038	43170	0.0894	-1720	0.0133	285	0.0538	2615901	0.0285	4145651	0.0593	2019
-966	0.0053	32820	0.1024	-2221	0.0131	308	0.0135	1856449	0.0265	4377685	0.0715	2020
-2885	0.0043	36242	0.1172	3082	0.0114	171	-0.0220	1810288	0.0161	3462909	0.1263	2021
-945	0.0189	39792	0.0966	214	0.0061	347	0.0483	3690964	0.0457	4164585	0.0866	Mean
801	0.0267	15189	0.0504	4945	0.0208	78	0.0609	2935125	0.0434	1003518	0.0774	Standard Deviation

Source: prepared by the researcher based on the financial statements of the research sample companies and computer results.

Table (6) Comparing the rate of return on investment with the intellectual capital of the research sample companies (amounts in millions of dinars).

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Companies										Company Name / Years
Bagdad Drinks **ΔIC**	Bagdad Drinks ROA	Al-Mansour Pharmaceuticals **ΔIC**	Al-Mansour Pharmaceuticals ROA	Khaleej Bank **ΔIC**	Khaleej Bank ROA	Investment Bank **ΔIC**	Investment Bank ROA	Al-Ameen Assurance **ΔIC**	Al-Ameen Assurance ROA	
30974	0.1124	0.0730	0.0730	-77362	0.0856	-20375	0.0000	-1437	0.1094	2012
221953	0.1275	0.0381	0.0381	-61484	0.0717	-36007	0.0001	-1161	0.2046	2013
111253	0.1116	0.0491	0.0491	-75974	0.0524	-33749	0.0001	868	0.1172	2014
174340	0.1328	0.0634	0.0634	-168626	0.0172	-111262	0.0000	-611	0.0869	2015
95093	0.1433	-0.0023	-0.0023	-182734	0.0087	-139793	0.0000	-826	0.0475	2016
168607	0.1305	0.0240	0.0240	-203887	0.0084	-178083	0.0000	-1201	-0.0187	2017
303547	0.1399	0.0090	0.0090	-257473	0.0016	-213102	0.0006	-2217	0.0256	2018
217248	0.1418	-0.2821	-0.2821	-264709	-0.0072	-193126	0.0000	-831	0.0062	2019
308708	0.1438	-0.0516	-0.0516	-265172	0.0002	-207774	0.0097	-828	0.0318	2020
378552	0.1076	-0.0349	-0.0349	-259326	-0.0094	-188138	0.0017	-832	0.0736	2021
201028	0.1291	-0.0114	-0.0114	-181675	0.0229	-132141	0.0012	-908	0.0684	Mean
107644	0.0140	0.1033	0.1033	83537	0.0342	76847	0.0030	775	0.0650	Standard Deviation

Source: prepared by the researcher based on the financial statements of the research sample companies and computer results

We notice from the comparison in the previous two tables that the higher the intellectual capital, the rate of return on investment rises, and the lower the intellectual capital, the lower the rate of return on investment. We accept the alternative hypothesis that there is an effect of measuring intellectual capital on investment.

8. CONCLUSION

The measurement of intellectual capital represents a multidimensional and complex problem, which arises from the intangible nature of a heterogeneous group of intellectual resources, and with the imposition of the impossibility of measuring intellectual capital through financial accounting, it is necessary to measure intellectual capital through market values with the outputs of financial accounting and thus Obtaining an index and efficiency of intellectual capital, and the rate of return on investment is measured using the outputs of financial accounting.

The researcher proved the research hypothesis that there is an effect of intellectual capital on investment, and there is a direct relationship between intellectual capital and investment through the results of the study and its comparison for each company of the research sample and for each year.

The researcher found that the higher the intellectual capital, the higher the rate of return on

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investment, and the lower the intellectual capital, the lower the rate of return on investment.

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