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Measuring and Analyzing Productivity Indicators in the Iraqi General Insurance Company for the Period (2011-2020)

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Abstract: The research aims to present the basic concepts of productivity and its importance. Determining the metrics used and the most important indicators affecting the productivity of the research sample company. This was done for the purpose of answering the research problem, which is the contribution of measuring productivity indicators to the production process of the Iraqi General Insurance Company? What is the most important indicator in the production process of the company? The research hypothesis was formulated to study and determine the relationship between productivity measurement indicators and the company's outputs. The Iraqi General Insurance Company was chosen as the research sample as it is the second largest and oldest insurance company in Iraq in terms of capital, productivity and human resources. One of the most important results of the research is the increase in productivity in general for the company. In addition, the increase in the company's productivity indicates that it was not exposed to losses and achieved profits during the study years, but in varying proportions. One of the recommendations of the research is the need for Iraqi insurance companies, especially government insurance companies, to pay attention to measuring and analyzing total and partial productivity. It is an indicator of the activity and performance of the insurance company during the financial year. And the establishment of a special section to measure and analyze productivity within the organizational structure of the Iraqi Insurance Company to periodically measure productivity indicators.

Keywords: Production, Productivity indicators, Insurance company

Introduction

The production function in organizations occupies an important place because of its primary role in the production of necessary and necessary goods and services to meet the needs and desires of customers. As this function is one of the basic functions of the organization. It consists of a set of inputs on which a set of operations are carried out to give in the end outputs represented in goods and services.

Productivity is an important indicator of the indicators on which business organizations, including those working in the insurance sector, are based due to the growth and expansion of insurance activity in Iraq in recent years because insurance is a cover to protect the economic activity of citizens and companies by protecting property and capital from various risks.

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The measurement of the productivity indicator in the insurance company reflects the extent to which the available resources are exploited and invested in an efficient manner and the extent to which the objectives planned by the company are achieved through an inverse relationship between them and productivity. As the improvement in the company's productivity index increases, the greater the company's ability to employ its financial and human resources efficiently and effectively, and vice versa when it declines. The Iraqi General Insurance Company, one of the main insurance companies in Iraq, faced many economic, political and social challenges that had a direct impact on its productivity indicators during the study years (2011-2020). The research included four sections. The first topic dealt with the research methodology through the problem and hypothesis of the research and the reason for choosing the research sample and reviewing previous studies. The second dealt with the concept of productivity and indicators of productivity measurement. The third topic reviewed the data analysis of the company's productivity indicators using statistical methods. Finally, the fourth topic reviewed the most important conclusions and recommendations of the research.

(Research methodology and previous studies)

1 - Research problem:

The Iraqi insurance market is considered one of the weakest insurance markets in the region, despite the commercial and economic activity in various sectors such as the oil sector during the previous years, which affects the work of insurance companies through fluctuating productivity levels due to challenges and economic, political and social conditions, which affects the activity of companies operating in the market By influencing its financial solvency, competitiveness, and its relationship with its customers (the insured), productivity indicators are the focus of attention for a large number of researchers. This interest is focused on raising the company's productivity through measuring and analyzing the productivity indicators of the surveyed company and achieving appropriate productivity in line with its planned goals. Therefore, the basic research problem was formulated by answering the following questions, which is the extent to which the measurement of productivity indicators contributes to the production process of the Iraqi General Insurance Company? What is the most important indicator in the production process of the company?

2- Research objectives:

a. Presenting the basic concepts of productivity and its importance and determining the standards used in the company.

b. Knowing the most important indicators affecting the productivity of the research sample company.

c. - Provide recommendations for the research sample company through the results reached by the researcher.

3- Significance of the study:

a. Measuring productivity is a basic and necessary goal for all insurance companies for the purpose of their survival and continuity.

b. Identify the reasons for the fluctuation of productivity and identify the best indicators suitable for measuring productivity in the company, the research sample.

c. Knowing the productivity level of the research sample company.

4- Research hypotheses:

a. There is a significant correlation between productivity measurement indicators and the outcomes of the

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Iraqi General Insurance Company. Sub-hypotheses are derived from it:

1) There is a significant correlation between the indicators of total productivity and the outputs of the Iraqi General Insurance Company.

2) There is a significant correlation between the multifactorial productivity indicators and the outputs of the Iraqi General Insurance Company

3) There is a significant correlation between the partial productivity indicators and the outputs of the Iraqi General Insurance Company.

b. There is a significant effect between productivity measurement indicators and the outputs of the Iraqi General Insurance Company.

5- Research Methodology:

Use the descriptive analytical method, as the description was used in collecting data and information for research requirements, and analysis by measuring productivity indicators and the relationship between them using statistical analysis.

6 - Limitations of the search:

a. Time limits: annual data and reports for the period (2011-2020).

b. Spatial boundaries: the Iraqi General Insurance Company / Baghdad / Iraq.

7 - Research community and sample:

The Iraqi insurance market consists of (3) state-owned general insurance companies. These companies are the National General Insurance Company, the Iraqi General Insurance Company, the Iraqi Reinsurance Company, and (22) private insurance companies. These companies have limited capabilities in terms of capital, productivity and human resources, compared to state insurance companies. The Iraqi General Insurance Company was chosen as the research sample as it is the second largest and oldest insurance company in Iraq in terms of capital, productivity and human resources. The company was established in 1959 and the company deals with all types of insurance such as: (individual and group life insurance, group health insurance, supplementary cars, marine merchandise, fire, engineering, accidents and civil liability).

8- Previous studies:

1- Study (C.P. Barros, et al., 2005) Title of the study:

((Evaluating the Efficiency and Productivity of Insurance Companies with a Malmquist Index: A Case Study for Portugal))

The study dealt with the analysis of the relative efficiency of Portuguese insurance companies and their evaluation by using a variety of measures of inputs and outputs. As well as evaluating the total productivity of insurance companies operating in the Portuguese market, determining the factors determining efficiency, and providing criteria for improving the poor performance of insurance companies using the Malmquist index. The study reached to identify the main threats to efficiency in insurance companies, which are represented by state intervention, changes in the labor market, administrative policies in these companies, the internal environment, teamwork, prevailing market conditions, and competition with insurance companies in the local insurance market. One of the most important recommendations of the study is the need for insurance companies to change their administrative policies by choosing efficiency, enhancing incentives, and following the necessary procedures to improve their competitiveness. The difference with the case study is the use of different

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productivity indicators in analyzing the productivity of the company under study, and the study sample is a company operating in the Iraqi market.

2- Study (20177M. Majid) Title of the study:

(Assessing the productivity of insurance companies in Indonesia: A nonparametric approach))

This study examined the extent to which technical and efficiency changes contributed to productivity growth in Indonesian insurance companies through the application of the (Malmquist) indicator for the period 2012 to 2015. The productivity of insurance companies was measured through inputs (administrative expenses and commissions) and outputs (insurance premium and investment). The study found that the average total factor productivity of insurance companies in Indonesia is mainly affected by technical change rather than efficiency change. The study also concluded that the main source of efficiency change is due to technical competence. One of the most important recommendations of the study is that to enhance the productivity of companies, the manager must be able to selectively combine the current inputs for productivity with the outputs at the lowest cost and to adopt advanced technology in productivity. The difference with the case study is the use of all input and output elements in analyzing the productivity of the company under study, and the study sample is a company operating in the Iraqi market.

3- Study (Al-Bayati and Al-Baldawi, 2020), the title of the study: ((Low productivity and its impact on the profitability of insurance companies))

The study aims to search for the causes of low productivity in some of the insurance portfolios of the company under study and to identify possible treatments to reduce the factors and variables in a way that secures their rise and the definition of profitability and its relationship and its impact on changing the productivity of the insurance portfolio. The net in the life insurance portfolio and the auto insurance portfolio, and there is no impact on the marine and engineering insurance portfolio. One of the most important recommendations of the study is to establish a special section to study and analyze the productivity of the company to measure the efficiency and effectiveness of productivity. As for its difference with the current study, it deals with the productivity of the company in general and not on the productivity of a particular portfolio. As well as using the total number of indicators for a number of years to measure and analyze the productivity of the company under study.

(Theoretical framework for research)

1: The concept of production and productivity

Some see that production is an activity through which inputs from all production elements and production inputs are converted into commodity or service outputs of greater value. And then it entails the creation of benefits that satisfy human desires or increase them. The production and the benefits that it entails, the benefit may be in a substantial form, which results in production changing in the form of outputs compared to the inputs. (Ayman: 2018, 3)

Production can be defined as a sub-system in an organization or company, whose main task is to transform inputs into goods and services. (Fayyad, Qadada, 2010: 19)

The productivity is the process of synthesis between the factors of production. The synthesis process is based on laws that control this process. This is because when the producer seeks to produce a good or a service, he does not add to the combination of production elements units of the production factors used without a scientific basis governing it (Abdul Hamid, Theory: 2015, 214)

Productivity may mean the relationship between the outputs of goods and services and the inputs of

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materials and labour. Or measuring the extent to which the organization succeeds in accomplishing its planned tasks. From an economic point of view, when measuring productivity, success is seen in producing the largest possible amount of output from goods and services on the basis of the size of the inputs. (Ayoub et al.: 175, 2011).

Or it is a standard or indicator of the efficiency and effectiveness of using the material and human resources available to insurance companies in a specific period of time and in light of the surrounding environmental factors. In the insurance industry, productivity is the amount resulting from the sale of various insurance policies through the company's employees. (Al-Bayati and Al-Baldawi: 289), 2020

2: The difference between production and productivity

There is a clear confusion between production and productivity. Production is the total output (quantity or value), while productivity is the relationship of inputs, outputs and the elements used in its production. Or it is the ratio between the inputs and outputs of the production elements. (Ayman: 2018, 6)

Production is often synonymous with productivity for many, but the scientific reality indicates that there is a clear difference between production, which represents obtaining and using production factors for a specific commodity or providing a useful service, and productivity, which represents the existing relationship of inputs and outputs, if the expansion In the use of production elements may lead to an increase in production, but this may not lead at the same time to a rise in productivity, and it can be said that increasing the productivity of any company can only be done by using its assets with high efficiency and can be achieved through: Mahmoud, Fakhoury: 2010,(36 .)

o Increasing the value of the final product with the stability of the value of the resources used in production.

o Stability in the value of the final product with a decrease or decrease in the value of the resources used.

o Increasing the value of the final product while increasing the value of the resources used by a smaller percentage.

o A decrease in the value of the final product with a decrease in the value of the used one.

3: The importance of measuring productivity

a) A source of wages or salaries that workers receive, whatever their positions in society. The owners of the production elements who carried out the production process get this production, each according to his contribution to the production process. If their productivity increases, this leads to an increase in the importance of the role they play in their job. Its decline is evidence of a weakness in the contribution and the low performance of the role assigned to it. (Abdul Hamid, Theory: 2015, 215)

b) It is considered one of the sufficiency indicators. For the organization, productivity reflects the management's efficiency in exploiting the resources and capabilities available to it. Therefore, increasing productivity means developing its products, services and human resources, that is, the administration's use of its resources in the best possible way. On the contrary, the low productivity means that the administration did not improve the exploitation of its resources. The productivity here is a reflection of the performance of the organization.

c) Controlling inflation at the level of the national economy of countries. (Ayoub et al.: 175, 2011).

d) Productivity affects the welfare of society. This is through the goods and services it provides to members of the consumer society in terms of quantity, quality, timing, suitability and satisfying their tastes.

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4. Productivity Measurement Objectives:

a) Identifying production constraints and removing the reasons that hinder productivity improvement

b) Determining work methods and ways to improve productivity.

c) Measuring the performance efficiency of the insurance company.

d) Determining the rate of labor productivity, which is an important indicator in knowing the economic development of the country.

e) Finding an accurate criterion for knowing the productive efficiency of insurance services and judging it by customers.

f) Drawing up the wages and incentives policy for the employees of the company. (Al-Bayati and Al-Baldawi: 292), 2020

5: Productivity Measurement Indicators

The productivity of any production system can be measured by dividing the output by the input to that system. Accuracy must be taken in calculating the inputs and outputs in order for the company to obtain a true picture of productivity. Productivity is usually expressed in one of the following ways: (Carpentry, Mohsen: 2012, 23-25)

1-Total Productivity:

It is the percentage that you get by dividing the total outputs by the total inputs. It usually expresses the total changes between the outputs and the inputs, and it is calculated by the following rule:

$$\mathbf{PT}=\frac{OT}{IT}$$

So, PT = total productivity, OT = total output, IT = total input

Inputs are numbers consisting of workers, raw materials, money .. etc. that are converted into goods or services of monetary value. Inputs and outputs should be expressed in similar units.

2-Productivity Multifactor

This productivity represents the sum of the outputs attributed to a subset of the inputs and the sub-set of the inputs may be from workers and money or from workers and machines ... etc. It is calculated by the following rule:

$$\mathbf{PM}=\frac{\mathbf{OT}}{IM}$$

As PM = multi-factor productivity, OT = total output, IM = sub-factor of inputs

3-Partial Factor Productivity

It is the ratio between the sum of the outputs and one of the inputs, and it is calculated according to the following rule:

$$\mathbf{PS}=\frac{\mathbf{OT}}{\mathbf{IS}}$$

As PS = partial productivity, OT = total output, IS = one of the inputs

Production managers often use partial productivity to evaluate the performance of operations in relation to one of the production factors (the inputs), and the partial productivity is usually calculated between the

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sum of the outputs and one of the different production factors individually. It includes measuring the productivity of each production element alone and evaluating it through comparison with an indicator generally accepted within the company (Ayoub et al.: 175, 2011).

4-Productivity Index

We get it by dividing the productivity of a year by the productivity of another year called (base year) for the purpose of comparing the productivity of the company for one year with the productivity of a previous year or years. Productivity indicators are used to evaluate the performance of operations or to compare its productivity with competing companies, such as the performance of suppliers, the image of goods and services auxiliary to production, as well Customer satisfaction, production role and company financial statements. (Evans,1997,112)

The productivity indicator represents the extent to which productivity has increased or decreased in the current period and is measured by:

$$\mathbf{PI}=\frac{\boldsymbol{Pn}}{\boldsymbol{Pb}}\times\mathbf{100}$$

So, Pn = productivity of a given year (n) Pb = productivity of the base year b

5-Change Productivity

This measure indicates the amount of difference in the productivity of a year relative to the productivity of a base year or any previous year. The change in productivity may be positive, negative or zero (i.e. there is no change). The change in productivity will reflect the amount of increase or decrease in productivity. It is measured by the following rule:

$$\mathbf{PC}=\frac{\boldsymbol{Pn-Pb}}{\boldsymbol{Pb}}\times\mathbf{100}$$

The above metrics complement each other. Total productivity reflects the contribution of all inputs to the formation of outputs without distinguishing the amount of contribution of each of the inputs. Whereas partial or multi-factor productivity indicates the contribution amount for each or more inputs independently.

(Applicable Framework of this study)

1: An overview of the study sample (the Iraqi General Insurance Company):

The Iraqi General Insurance Company was chosen as the largest and oldest insurance company in the Iraqi insurance market after the National General Insurance Company. The company was established in 1959 as a private company practicing all types of insurance and reinsurance. In 1964 it was nationalized under the decisions of nationalization of companies and specialized in life insurance, and the portfolios of all foreign and Arab companies operating in the Iraqi market were transferred to it. In 1988, the decision was issued to allow the company again to practice all types of insurance such as car, marine, fire and engineering insurance. The company's nominal and paid-up capital is (2) billion Iraqi dinars, in addition to assets exceeding (85) billion Iraqi dinars. The company consists of sixteen divisions and has 19 branches distributed among the Iraqi governorates. The company practices several types of insurance: (individual and group life insurance, health insurance, supplementary cars, marine merchandise, fire, engineering, accidents, and civil liability). The company invests its financial surpluses in four main aspects (real estate investments / contribution to private sector companies / granting real estate loans / depositing with banks). The number of employees in the company is (380) employees. The company aims to contribute to economic development by providing insurance protection to members of society and encouraging savings, as well as employing savings and funds in available investment aspects. In other

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words, the company's objectives are to develop insurance revenues and revenues from investment activity in return for providing the appropriate insurance service for all members of society. (Iraqi Insurance Company report: 2020, https://www.iq-insurance.com)

Measuring and analyzing the productivity indicators of the Iraqi General Insurance Company:

Table (1) The outputs (revenues) of the Iraqi General Insurance Company for the period (2011-2020) (the unit of measurement is in dinars)

Percentage change 6	Total Output (revenues) 5	Retained reserves 4	Realized investment revenues 3	Total realized premiums 2	Year
-	39369565000	13187502000	1652786000	24529277000	**2011**
0. 6	65823079000	20400606000	1714150000	43708323000	**2012**
0.18	77890016000	24220132000	2394596000	51275288000	**2013**
0.13	87744815000	24851320000	2522865000	60370630000	**2014**
0.09	96413515000	30174355000	2771112000	63468048000	**2015**
-0.12	84294892000	28319934000	2796636000	53178322000	**2016**
-0.01	83703776000	31321205000	2923242000	49459329000	**2017**
0.5	125545389000	41404960000	2993785000	81146644000	**2018**
-0.08	116079462000	44407298000	3320460000	71339704000	**2019**
-0.03	112787555000	46672829000	3403298000	62711428000	**2020**

Source: made by author based on the company's data

Table (1) are the outputs of the Iraqi insurance company and represent (revenues) of the company. The second column of the table contains the premiums paid by the insured, the bulk of the company's earned income. And it reflects the extent of the development of its business, where it is possible to measure the extent of the company's success in maintaining its growth and prosperity through the company's practice of all types of insurance. The third column refers to the investment revenues of the Iraqi insurance company, which are the revenues resulting from investing the financial surpluses in various aspects of investment. The fourth column includes the amounts of the retained reserves, which include the company's technical reserves, which consist of hazard reserves, suspended compensation reserves, and emergency reserves. The last sixth column shows the percentage of change in the company's outputs during the years of study, which is extracted through (total outputs of the current year - total outputs of the previous year / total outputs of the previous year x 100). The table above indicates that the total outputs (revenues) of the insurance company increased during the years 2011-2015 and 2018 due to the increase in insurance premiums, realized investment income and reserves during these years. While the amounts of revenue decreased during the years 2016-2017 and 2019-2020 due to the decrease in insurance premiums from the previous year, as well as the economic and political conditions of the state. The highest revenues in 2018 amounted to (12,554,389,000) dinars due to the high insurance premiums of the company. Figure (1) shows the total outputs of the company during the study period.

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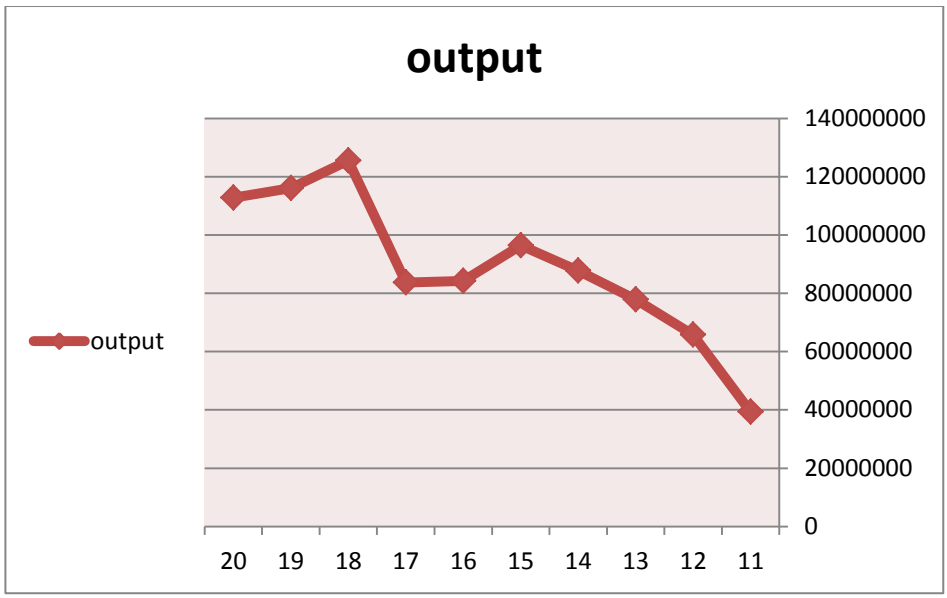

Figure 1. Revenue of the Iraqi insurance company between (2011- 2020)

Table (2) Inputs (expenses) for the Iraqi General Insurance Company for the period (2011-2020) (the unit of measurement is in dinars)

percentage change	Total Inputs (Expenses)	Administrative expenses 4	Reinsurance premiums issued 3	paid Insurance reimbursement 2	Year
-	17288403000	4195217000	4065131000	9028055000	**2011**
0.6	27734416000	4578963000	5434306000	17721147000	**2012**
0.4	37830396000	6265189000	5974806000	25590401000	**2013**
0.2	46359158000	5969728000	7907795000	32481635000	**2014**
-0.02	45497102000	5864049000	5365002000	35309789000	**2015**
-0.1	40871537000	5841568000	4345745000	30684224000	**2016**
-0.13	35470074000	5434268000	3509281000	26526525000	**2017**
0.3	46579395000	7431384000	4905276000	34242735000	**2018**
0.01	46974165000	7063302000	2880214000	37030649000	**2019**
-0.09	42558191000	6455860000	2224617000	33877714000	**2020**

Source: made by the author based on the company's financial statements.

Table (2) is the inputs of the Iraqi General Insurance Company and represents the (expenses) of the company. The second column of the table contains the amounts of insurance compensation paid. The compensation paid to the beneficiaries and (the insured) constitutes the largest part of the expenses of insurance operations in the company. As for the third column, it consists of the reinsurance premiums issued to the Iraqi reinsurance company and foreign reinsurance companies in exchange for insurance protection for the company's business. The fourth column consists of the company's administrative expenses, which consist of salaries, wages, and bonuses for the company's employees, in addition to other commodity, service, and transformational requirements such as advertising, research and development. Through the above table, we note that the company's total inputs (expenses) increased during the years 2011-2014 and 2018-2019 due to the increase in the amounts of compensation paid to the insured, as well as the increase in administrative expenses of salaries, wages and other requirements in the company

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during these years. While the inputs decreased during the years 2015-2017 and 2020, which indicates a decrease in the company's expenses in general due to the decrease in compensation paid to the insured and the decrease in re-issuance premiums and administrative expenses. The highest percentage of inputs (expenses) in 2019 amounted to (46,974,165,000) dinars, which indicates an increase in company expenses due to the increase in compensation paid to the insured, as well as an increase in administrative expenses. Figure (2) shows the company's total inputs during the study period.

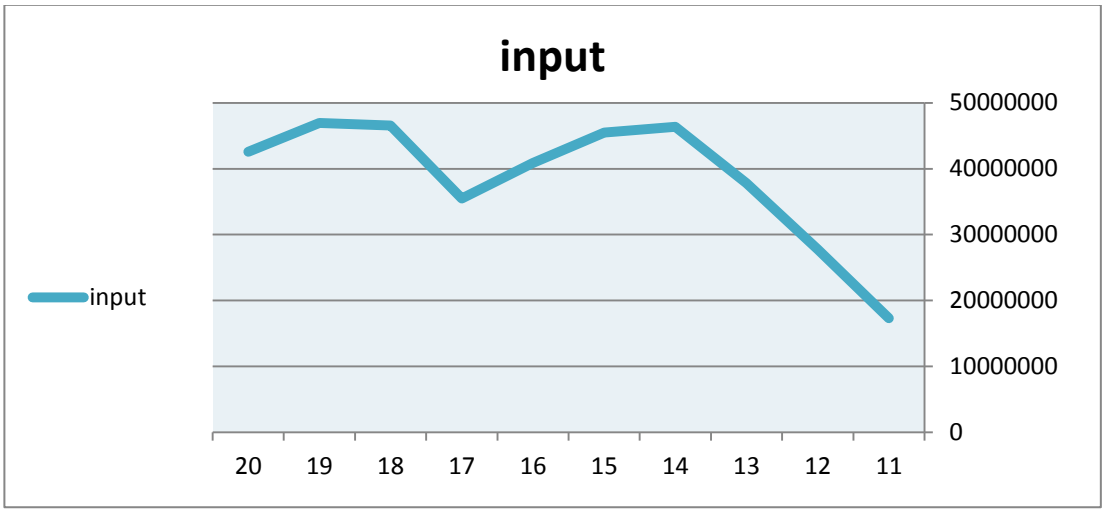

Figure (2) Inputs (expenses) for the Iraqi General Insurance Company for the period (2011-2020)

Table (3) analysis of the total productivity of the Iraqi insurance company for the period (2011-2020) (Iraqi dinar)

Productivity Change PC	Productivity Indicator PI	Total Productivity PT	Inputs IT	Outputs OT	Year
-	-	2.2	17288403000	39369565000	2011
4%	104%	2.3	27734416000	65823079000	2012
-13%	87%	2.0	37830396000	77890016000	2013
-5%	95%	1.9	46359158000	87744815000	2014
10%	110%	2.1	45497102000	96413515000	2015
-5%	95%	2.0	40871537000	84294892000	2016
15%	115%	2.3	35470074000	83703776000	2017
13%	113%	2.6	46579395000	125545389000	2018
-8%	92%	2.4	46974165000	116079462000	2019
8%	108%	2.6	42558191000	112787555000	2020
10%	102%	2.2	Average		

Source: Prepared by the author's based on the company's financial data

Table (3) analysis of the total productivity of the company in general during the study years indicates a noticeable and positive improvement in productivity. Where the average of the total productivity (2.2) and the change in productivity amounted to (10%) and the productivity index (102%). This means that there is an improvement and an increase in productivity by (1.2%). (If the value is greater than one, it means an improvement in the level of productivity, and if it is less than one, it means the deterioration and decrease in productivity).

As the total productivity increased during the years 2012, 2015, 2017, 2018, and 2020. The year 2018 was

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the best growth in total productivity at an annual rate of (2.6) dinars. The productivity index reached (113%), meaning that the amount of change in productivity from the previous year amounted to (13%), which is the highest during the years of study due to the decrease in expenses (compensation premiums, return and administrative expenses).

The table also shows a decrease in the total productivity indicator for the years 2013-2014, 2016 and 2019, where the change in the total productivity indicator for the above years appeared to be (in negative), which indicates a decrease in the total productivity during the indicated period. The year 2013 witnessed the lowest change in total productivity as it decreased by (-13%) due to the decrease in the productivity index to (0.87). The reason is due to the increase in administrative expenses compared to the outputs and the multifactorial drop in productivity in 2013 (as in Table 4), where the productivity indicator decreased despite the increase in production (increase in insurance premiums) and the partial productivity decrease for the same year, which amounted to (3.0) dinars compared to the productivity of 2012, which amounted to (3.7) dinars (as in Table 5). This prompts the company's management to search for the reasons for the high compensation paid to the insured because of its impact on the company's overall productivity level. Chart (3) shows the productivity ratios, the productivity indicator and the change in the total productivity of the company during the study period, where we note that the change in productivity has taken an upward growth with the productivity indicator during the mentioned period.

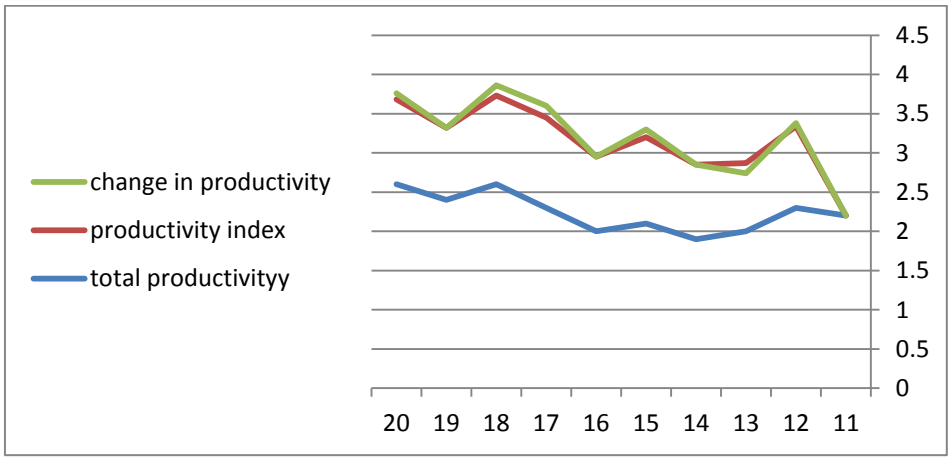

Figure (3) Analysis of the total productivity of the Iraqi General Insurance Company for the period (2011-2020)

Table (4) Multifactorial productivity analysis (paid compensation and reinsurance premiums) for the Iraqi (Insurance Company for the period (2011-2020) (Iraqi Dinar)

Change in multiple productivity factors	Indicator of multiple productivity factors	Multiple productivity factors PM	Inputs (compensation paid and reinsurance premiums(	Outputs OT	Year
-	-	3.0	13093186000	39369565000	2011
-7	93	2.8	23155453000	65823079000	2012
-14	86	2.4	31565207000	77890016000	2013
-13	87	2.1	40389430000	87744815000	2014
9	109	2.3	40674791000	96413515000	2015
4	104	2.4	35029969000	84294892000	2016

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12	112	2.7	30035806000	83703776000	2017
18	118	3.2	39148011000	125545389000	2018
-9	91	2.9	39910863000	116079462000	2019
7	107	3.1	36102331000	112787555000	2020
10%	101%	2.6	Average		

Source: Prepared by the author's based on the company's financial data

Table (4) Multifactor productivity analysis for a group of sub-factors of inputs through compensation paid to the insured and reinsurance premiums paid by the Iraqi insurance company to local and foreign reinsurance companies indicates a significant and positive improvement in multi-factor productivity, where the average productivity reached (2.6) And the productivity index (101%), which means there is an improvement and an increase in productivity by (1.1%). The year (2018) was the best year of growth in multiple productivity with an annual rate of (3.2) dinars, as the productivity index reached (118%). That is, the amount of change in productivity from the previous year amounted to (18%), which is the highest during the years of study due to the increase in insurance premiums and technical reserves of the company, the increase in investments and the decrease in compensation and expenses in general (as in Table 1).

The table also shows a decrease in the multi-productivity index for the years 2012-2013-2014-2019 due to the decrease in the revenue amounts represented by insurance premiums compared to the compensation paid to the insured by the company (as in Table 2). 14% -) due to the high compensation paid to the insured against the insurance premiums realized for the company. Figure (4) shows the impact of the change in productivity and productivity indicator on the multiple productivity of the company during the study period.

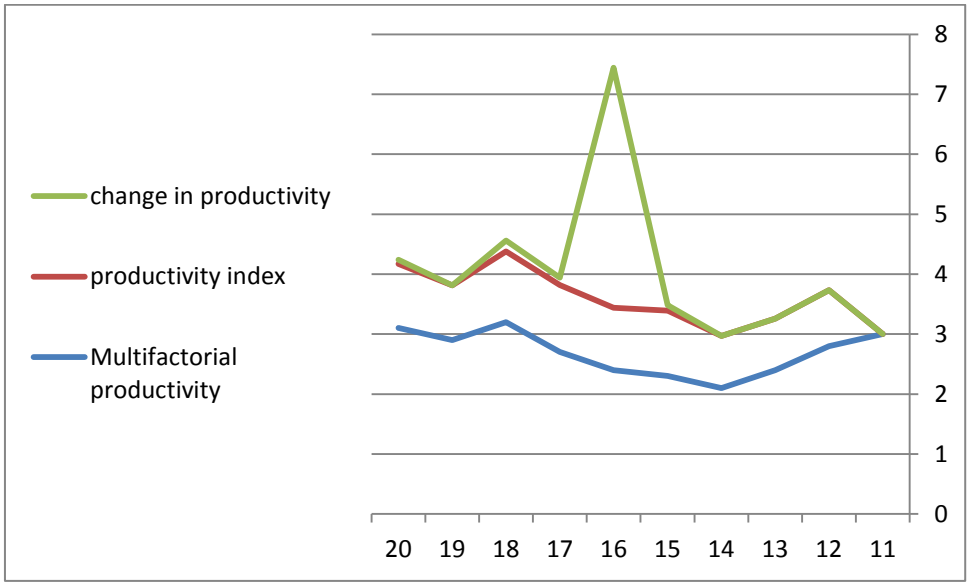

Figure (4) Multifactorial productivity analysis of the Iraqi General Insurance Company for the period (2011-2020)

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Table (5) analysis of partial productivity of one of the input factors (compensation paid) to the Iraqi insurance company for the period (2011-2020) (unit of measurement in dinars)

Partial productivity indicators	Partial productivity indicators	Partial Productivity PS	Input (compensation Paid)	Output OT	Year
-	-	4.3	9028055000	39369565000	2011
-14	%86	3.7	17721147000	65823079000	2012
-19	%81	3.0	25590401000	77890016000	2013
-10	%90	2.7	32481635000	87744815000	2014
0	%100	2.7	35309789000	96413515000	2015
0	%100	2.7	30684224000	84294892000	2016
15	%115	3.1	26526525000	83703776000	2017
16	%116	3.6	34242735000	125545389000	2018
-14	%86	3.1	37030649000	116079462000	2019
6	%106	3.3	33877714000	112787555000	2020
7%	98%	3.2	Average		

Source: Prepared by the author's based on the company's financial data

Table (5) shows the analysis of the partial productivity (for one of the factors of the inputs / compensation paid) to the insured by the company to a decrease in the partial productivity in general, where the average productivity reached (3.2) and the productivity index (98%). This means a decrease in productivity. The reason is due to the increase in the amounts of insurance compensation paid to the insured during the years of study. The year (2018) had the highest growth in partial productivity by (3.6) dinars. The productivity index reached (116 percent), meaning that the change in productivity from the previous year amounted to (16%), which is the highest due to the increase in insurance premiums and technical reserves and the increase in the company's financial investments in general (Table 1).

The previous table also shows a decrease in the partial productivity index for the years 2012-2013-2014-2019

Where the indicator of partial productivity change for the above years appeared negative, which indicates a decrease in productivity for the indicated years. The lowest change in productivity was in the year (2013), when it decreased by (-19%) due to the decrease in the productivity index to (0.81) and the reason is due to the increase in compensation paid compared to the premiums achieved in that year.

The productivity indicator for 2015 and 2016 shows the percentage (100%) and the change in productivity was (0), meaning there is no change in partial productivity, that is, there is no increase or decrease in productivity during the two years. Chart (5) shows the index, percentage change, and partial productivity of the compensation paid to the insured by the company

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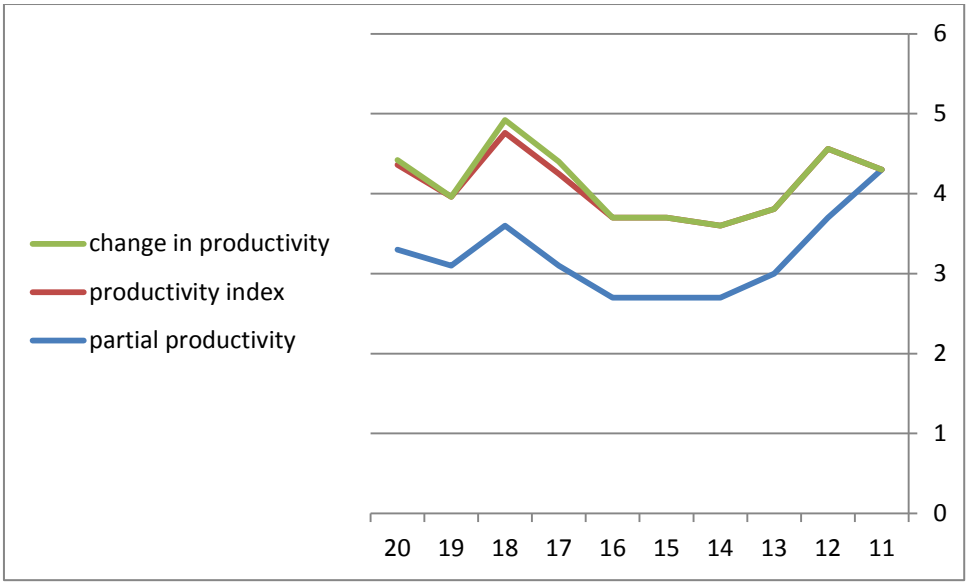

Figure (5) Analysis of the partial productivity of one of the input factors (compensation) for the Iraqi (General Insurance Company for the period (2011-2020

Table (6) Partial productivity analysis of one of the input factors (re-issued premiums) for the Iraqi Insurance

Partial productivity indicators	Partial productivity indicators	Partial Productivity PS	Input (compensation Paid)	Output OT	Year
-	-	9.6	4065131000	39369565000	2011
26	126	12.1	5434306000	65823079000	2012
7	107	13.0	5974806000	77890016000	2013
-15	85	11.0	7907795000	87744815000	2014
62	162	17.9	5365002000	96413515000	2015
7	107	19.3	4345745000	84294892000	2016
23	123	23.8	3509281000	83703776000	2017
7	107	25.5	4905276000	125545389000	2018
58	158	40.3	2880214000	116079462000	2019
25	125	50.6	2224617000	112787555000	2020
26.8	122%	22.3	Average		

Source: Prepared by the author's based on the company's financial data

Table (6) shows the analysis of partial productivity (for one of the input factors / re-export premiums) by the company to the rise in partial productivity, where the average productivity reached (22.3) and the productivity index (122%), which means that there is a rise and increase in partial productivity in general during the study years. The years (2015-2020) had the highest growth in partial productivity by (50.6) in 2020. As for the productivity index, it reached (107 to 162) as in (2015), which is the highest during the study years due to the increase in insurance premiums and technical reserves and the increase in financial investments The company and the decrease in compensation and expenses in general. (as in Table 1). It appears from the above table that the lowest change in productivity in the year (2014) decreased by (-15%) due to the decrease in the productivity index to (0.85). The reason is due to a significant increase in the re-issuance premiums by the Iraqi insurance company to local and foreign reinsurance companies (as in Table 2). Figure (6) shows the change in productivity and the effect of the partial productivity of the

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reinsurance premiums of the company during the study period.

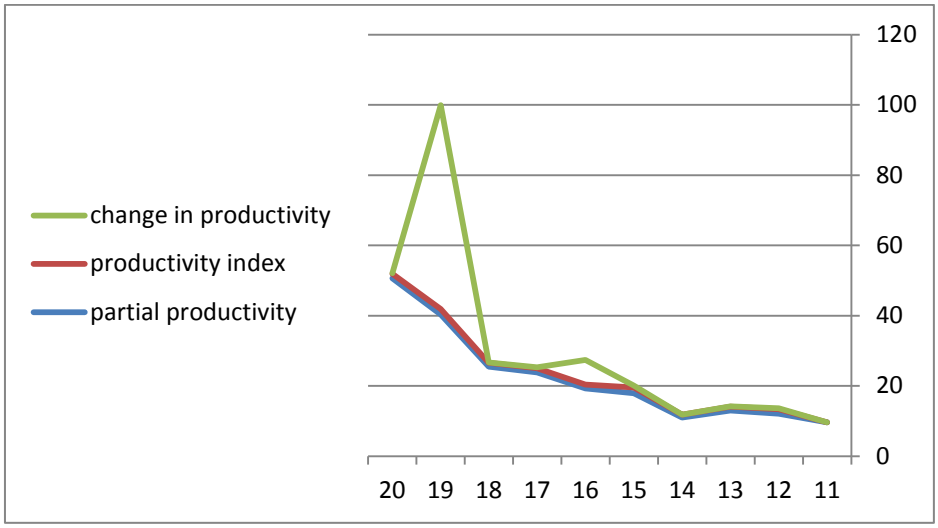

Figure (6) Analysis of the partial productivity of one of the entrance factors (return premiums) for the Iraqi General Insurance Company for the period (2011-2020(

Table (7) Partial productivity analysis of one of the input factors (administrative expenses) for the Iraqi Insurance Company for the period (2011-2020) (Iraqi dinars)

Partial productivity indicators	Partial productivity indicators	Partial Productivity PS	Input	Output OT	Year
		9.3	4195217000	39369565000	2011
53	153	14.3	4578963000	65823079000	2012
-13	87	12.4	6265189000	77890016000	2013
17	117	14.6	5969728000	87744815000	2014
12	112	16.4	5864049000	96413515000	2015
-12	88	14.4	5841568000	84294892000	2016
6	106	15.4	5434268000	83703776000	2017
9	109	16.8	7431384000	125545389000	2018
-3	97	16.4	7063302000	116079462000	2019
6	106	17.4	6455860000	112787555000	2020
17%	108%	14.7	Average		

Table (7) shows the analysis of partial productivity (for one of the factors of inputs / administrative expenses) paid by the company. It shows a rise in partial productivity, where the average productivity reached (14.7), the productivity index (108%) and the average change in productivity (17%). This means higher partial productivity in general during the school years. The years (2018) and (2020) had the highest growth in partial productivity by (16.8 and (17.4), as the productivity index for 2018 reached (109%), meaning that the amount of change in productivity was (9%) due to the high insurance premiums of the company.

It appears from the above table that the lowest change in partial productivity in the year (2013) decreased by (-13%) due to the decrease in the productivity index to (0.87) and due to the increase in the company's administrative expenses compared to its outputs (Table 2). As well as the fluctuation of the partial productivity change index for the years (2014-205) due to the increase in output compared to input. Figure (7) shows the change in the partial productivity of the company during the study period.

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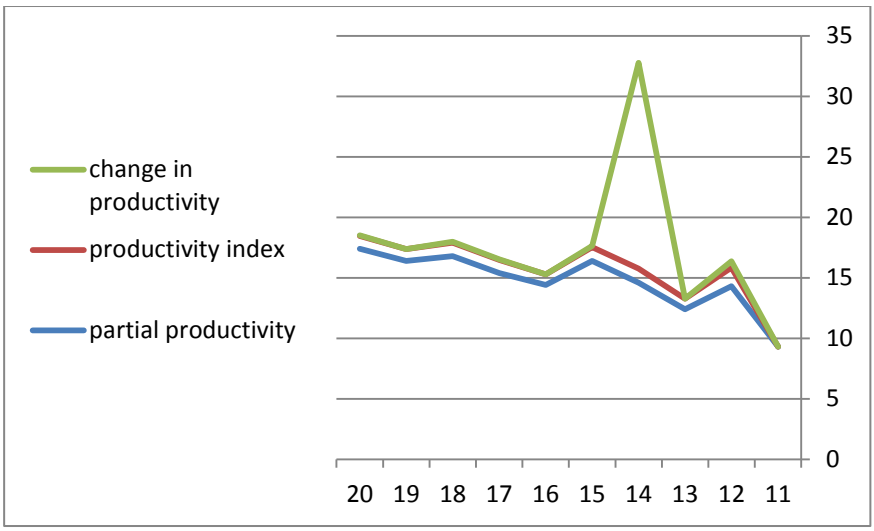

Figure (7) Partial productivity analysis of one of the entrance factors (administrative expenses) of the Iraqi General Insurance Company for the period (2011-2020)

Measuring the correlation between the research variables:

The correlation between the dimensions of the first axis (indicators of productivity measurement) and the second axis (the outputs of the Iraqi insurance company) is measured and known by the (Pearson) coefficient.

First: To test the correlation between the research variables

The main hypothesis: (there is a significant correlation between productivity measurement indicators and the outcomes of the Iraqi General Insurance Company)

Table (8) shows the correlation between productivity measurement indicators and the outcomes of the Iraqi General Insurance Company, as (Variable) represents the research variables, as for (Pearson correlation) the correlation coefficient and (Sig) represented by the level of morale, which should be less than (0.05) to indicate the presence of Significant correlation relationship. Whenever the correlation coefficient is close to (1), this indicates that the relationship between the variables is strong, but if the value of the correlation coefficient reaches (0), this indicates that there is no correlation.

There is a significant relationship between productivity indicators and insurance company outputs, which amounted to (0.889) with a significant level of (0.001) which is less than (0.05), which indicates the acceptance of the main hypothesis, and as Table (8) shows that the correlation coefficient (pearson) is strongly related directly between the study variables.

Table No. (8) shows the correlation between productivity measurement indicators and the outputs of the Iraqi General Insurance Company

Correlations			
		Productivity Measure	Insurance Company
Productivity Measure	Pearson Correlation	1	.889**
	Sig. (2-tailed)		.001
	N	10	10
Insurance Company	Pearson Correlation	.889**	1
	Sig. (2-tailed)	.001	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

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The first hypothesis: There is a significant correlation between the indicators of total productivity and the outputs of the Iraqi General Insurance Company

Table No. (9) shows that the correlation coefficient (Pearson) has a strong relationship between the variable total productivity indicators and the outcomes of the Iraqi General Insurance Company, as the value of the coefficient reached (0.970) and with a level of significance less than (0.05), which indicates the acceptance of the first sub-hypothesis.

Table (9) shows the correlation between the indicators of total productivity and the outputs of the Iraqi General Insurance Company

Correlations			
		Indicators of total productivity	Output of Insurance Company
Indicators of total productivity	Pearson Correlation	1	.970
	Sig. (2-tailed)		.029
	N	10	10
Output of Insurance Company	Pearson Correlation	.970	1
	Sig. (2-tailed)	.029	
	N	10	10

The second hypothesis: There is a significant correlation between the multifactorial productivity indicators and the outputs of the Iraqi General Insurance Company:

Table (10) shows that the correlation coefficient (Pearson) has a strong relationship between the multifactorial productivity indicators and the outcomes of the Iraqi General Insurance Company. second sub.

Table (10) shows the correlation between multifactorial productivity indicators and the outputs of the Iraqi General Insurance Company

Correlations			
		Multiple productivity indicators	Output of Insurance Company
Multiple productivity indicators	Pearson Correlation	1	.767**
	Sig. (2-tailed)		.010
	N	10	10
Output of Insurance Company	Pearson Correlation	.767**	1
	Sig. (2-tailed)	.010	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

The third hypothesis: There is a significant correlation between the partial productivity indicators and the outputs of the Iraqi General Insurance Company:

Table (11) shows that the correlation coefficient (Pearson) has a strong relationship between the variable partial productivity indicators and the outputs of the Iraqi General Insurance Company, as the correlation amount was (0.861) with a level of significance (0.010), which indicates the acceptance of the hypothesis

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Table (11) shows the correlation between partial productivity indicators and the outputs of the Iraqi General Insurance Company

Correlations			
		Partial Productivity Indicators	Output of Insurance Company
Partial Productivity Indicators	Pearson Correlation	1	.861**
	Sig. (2-tailed)		.010
	N	10	10
Output of Insurance Company	Pearson Correlation	.861**	1
	Sig. (2-tailed)	.010	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

Second: Testing the hypothesis of the effect between the variables:
(There is a significant effect between productivity measurement indicators and the outputs of the Iraqi General Insurance Company)

To study the impact of productivity indicators, an appropriate hypothesis must be developed, as the productivity indicators variable is considered an independent variable, as for the dependent variable (the outputs of the Iraqi General Insurance Company). To study the hypothesis, it is necessary to develop an appropriate model for the data, which represents the problem of the study accurately. Through table (12) and after measuring the effect and choosing the best model for the data, the value of (0.818 = R^2) is shown. Which means (the coefficient of determining the best model), meaning that the independent variables explain (81%) affect the dependent variable, meaning that the rest are considered random errors in choosing the specific answer or are attributed to unknown errors, as their value reached (9%). As for measuring the role of the relationship between the variables, it reached a value of (R = 0.904), and this indicates that the relationship is strong. As for the value of the test (F = 22.902), which studies the appropriateness of the data regression line and its null hypothesis of the regression model, as the level of significance reached (0.000) which is less than (0.05), which indicates that there are no significant differences. The model represents the phenomenon studied as an accurate prediction, and the regression line fits the given data, i.e. accepting the null hypothesis, as for the coefficient (β), which represents the impact of productivity measurement indicators on the outcomes of the Iraqi General Insurance Company with a significant level of less than (0.05) after passing the (t) test. In other words, the relationship is direct and has a significant effect.

Table (12) shows the influence relationship between productivity measurement indicators and the outputs of the Iraqi General Insurance Company

Model Summary						
Model	R	R Square[b]	Adjusted R Square	F		
1	.904[a]	.818	.782	22.902		
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Revenues	.243	.155	.262	1.564	.024
	Expenditures	.298	.173	.326	1.719	.002
a. Dependent Variable						
b. Linear Regression through the Origin						

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(Conclusions and Recommendations)

Conclusions

1- By measuring and analyzing the total productivity of the company, there is an improvement and an increase in productivity in general, where the average total productivity is (2.2) and the productivity indicator is (102%), which means that there is an improvement and an increase in productivity by (1.2%).

2- The multi-factor productivity of the company was measured using the compensation paid and the paid reinsurance premiums. A significant and positive improvement appeared in the multi-factor productivity, where the average productivity reached (2.6) and the productivity index (101%), which means that there is an improvement and an increase in productivity by (1.1%).

3- Through the analysis of partial productivity (for paid compensation), a decrease appeared in the partial productivity of the company, where the average productivity reached (3.2) and the productivity index (98%) due to the high amounts of insurance compensation paid during the years of study.

4- Through the analysis of partial productivity (for administrative expenses), there was an increase in partial productivity, where the average productivity reached (14.7) and the productivity index (108%), which means a decrease in the company's administrative expenses in general.

5- The statistical analysis of the data indicates that there is a correlation and effect relationship between productivity indicators and the insurance company's outputs

6- The increase in the company's output indicates the management's interest in the productivity of its human resources and its optimal utilization.

7- The increase in the productivity of the company indicates that it was not exposed to losses, and that it achieved profits during the years of study, but in varying proportions.

Recommendations

1- Reconsidering the company's inputs (expenses) through the compensation paid to the insured, and the administrative expenses and addressing the reasons for their increase in order to achieve high productivity for the company in the coming years.

2- The need for Iraqi insurance companies, especially government insurance companies, to pay attention to measuring and analyzing total and partial productivity, which is an indicator of the activity and performance of the insurance company during the fiscal year.

3- For the purpose of continuity and maintaining increased productivity in general and revenues in particular, attention must be paid to developing the efficiency and expertise of the company's human resources.

4- Establishing a special department to measure and analyze productivity within the organizational structure of the Iraqi Insurance Company to periodically measure productivity indicators.

5- Encouraging (producers) working in the company by increasing incentives and rewards to be a motive for them to increase the sale of insurance policies and increase productivity.

6- To increase and support the productivity of the company, more attention should be paid to the use of technology and the adoption of modern methods of selling insurance services that provide convenience and speed in providing the service and communicating with the insured customers.

7- Since there are many insurance companies in the country, it is suggested to conduct more research to explore the productivity of companies operating in the Iraqi insurance market.

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