

## RELATIONSHIP AND EFFECT ON THE DOW JONES INTERNATIONAL ISLAMIC INDEX

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### Abstract

This study examines how relationships and influences are amongst the international dow jones index comprising the Dow Jones Islamic Market World Emerging Markets Index, the Dow Jones Islamic Market Europe Index, the Dow Jones Islamic Market U.S. Growth Index (USD), Dow Jones Islamic Market Greater China Index, Dow Jones Islamic Market Asia / Pacific Index, Dow Jones Islamic Market Malaysia Titans 25 Index, Dow Jones Islamic Market Asia / Pacific ex-Japan Index. This study uses correlation and causality analysis methods. From result and model of analysis that is in use, can be explained that 7 variables in doing analysis correlate each other and have strong relation, but 7 variable have no direct relation and significant.

**Keywords :** *DJIM, Correlation, causality, Islamic index.*

### INTRODUCTION

In the 1980s, many Islamic financial institutions began to emerge and began to expand their financial instruments. The Islamic finance institutions not only serve the financial needs of the more sophisticated

Islamic investment, but also expand the net worth, especially for financial institutions located in the region of the Arabian continent. In Islamic finance, many have applied collective investment schemes, using vehicles in the form of Islamic financial institutions, this institution is intended to manage customer funds as well as to save the number of customers, so that this is in accordance with Islamic law of sharia. Some instruments of asset management instruments in Islamic financial institutions have been born and considered to be the answer to meet current needs. In Girard and Hassan, (2005) [1] Although the amount of investment is still in the initial process, it can potentially be a pioneer in financial institutions or markets, because almost 25% of the population worldwide is Islamic. Here are the developments of some indices that are international for 1 year. (data from 21 November 2016 - 21 November 2017)

Figure 1 : Dow Jones 7 international Islamic index



Source : Proceed by author with excel

In Failaka, 2007) [2], Smyth, 2006) [3] and Cox, 2002) [4] explains that sharia funds are growing significantly from year to year, up to the third half of the 2000s. Some of Shari'ah's Investment Equity and Investment Value have been initially valued at only 10 funds to 200 funds, and all managed by sharia

financial institutions, with total assets of nearly \$ 17- an billion. One of the factors causing this increase is a company called Gulf Cooperation Countries in Saudi Arabia. This also led to a rise in the stock market indirectly. In the decade of the '80s, Saudi Arabia's famous Saudi Commercial and National Commercial Bank became Saudi Arabia's leading pioneer in sharia investment. a financial institution that was originally a joint venture and has its investment milestone in the West, making the management of sharia funds in the field of mutual fund industry become well known. Call it the main investment houses of HSBC, UBS, Schroders, and Deutsche Bank. They have now become managers of shariah mutual fund funds and are an institution that can attract Muslim investors who want to invest according to their beliefs. In this study will see how the Islamic investment index, within the framework of international correlation and dow jones indek relationship.

### LITERATURE REVIEW

In a study conducted by Atta (2000) [5], Hassan (2001) [6], Girard and Hassan (2005) [7] and Dabeerru (2006) [8] relate to the international Islamic index, providing various explanations and results. Differences in the results of the study may be related to sample data, different performance benchmarks and measures, used in each of the studies mentioned. One of the results of their study used the Dow Jones Index (DJIM) performance and linked it to market indices and risk-free rates. In the study, the DJIM data model outperformed its conventional counterpart, but this latter investment provided a slightly higher risk-free rate than the conventional model. In their study reported the existence of six Dow Jones Islamic index performance which confirmed the efficiency of the conventional index. And there are also studies of what they do find the difference in performance between dow jones Islamic indonesian models with 7 conventional indices. The average analytical model used using performance measures, and the use of single-factor CAMP during the study period 1996 to 2005. In the study they reported there was a growth value of small stocks that boosted the performance of the Islamic index dow jones. Similarly, for a study conducted by the last writer of Saudi Arabia who pointed to the Syari'ah index in a poorly performing position.

In Charhart (1997) [9] and Girard and Hassan (2008) [10] his study of Islamic indexes can be made as a first step towards the Islamic index literature empirically. Some ratios such as Alpha Jensen and Treynor Ratio, they make comparisons against five islamic index FTSE and five conventional MSCI benchmarks. In addition, the use of selectivity, selectivity, and diversification models of Fama and French analysis in testing the time of investment managers and the capabilities of investment managers. On the other hand, the 4-factor model analysis is also maximized to test the international performance of the Islamic index. From their study, explaining the existence of not significant dI performance differences between the international Islamic index of FTSE, colleagues, and the stylistic ability of an investment manager. Some other factors such as size, book-to-market, market risk, the momentum, and the influence of local factors and global factors. However there was an integration among international Islamic index and international non-Islamic index during the period in doing research.

But in Atta (2000) [5], Hassan (2001) [6], Tilva and Tuli (2002) [11], Judges and Rashidian (2002; 2004) [12] [13] recent decades of clumps of Dow Jones Islamic Market Index is also a concern as well as some empirical studies. the earliest and includes the work of Judges and. Many of the Studies they do by comparing the performance that occurs on the Dow Jones Islamic market index (DJIM) with conventional benchmarks. Still remains the same, the performance measure is made into one option and the basis of the researchers' figures in addition to testing the Islamic index with the conventional market index. Another additional variable is the three-month risk-free rate. In conclusion, Dow Jones international indekx has superior performance, when compared with risk-free interest rate from international conventional index. The average data used for the study ranged from 1996-2000. Data in the form of six islamic Dow jones international market index is considered slightly more efficient, when compared to conventional index.

The use of models from conventional S & P 500 benchmarks and the use of model performance analysis models from Fama and French (1998) [14]. In the study explains that, international index of Islam with international conventional index there is a correlation and there is no significant difference in terms of performance. Some of the indices they often use as study data include analyzing DJIM's performance with the Wilshire 5000 and 3 T-Bill moths with weekly data. They concluded the lack of performance of the Islamic index. Judges and Rashidian (2004) [13] re-analyzed the DJIM's performance but with different Green Index benchmarks, DJ World, Libor, using a different set of data (2000-2004). The Islamic index gains an inferior level compared to the Green index (the index of social responsibility).

**DATA AND RESEARCH METHODS**

**Research data**

This study was conducted in November 2017. In this study the authors used the 7 Islamic index data from the period of 21 November 2016 to 21 november 21017. Islamic index data consist of Dow Jones Islamic Market World Emerging Markets Index, Dow Jones Islamic Market Europe Index , Dow Jones Islamic Market US Growth Index (USD), Dow Jones Islamic Market Greater China Index, Dow Jones Islamic Market Asia / Pacific Index, Dow Jones Islamic Market Malaysia Titans 25 Index, Dow Jones Islamic Market Asia / Pacific ex-Japan Index. The following authors describe the descriptive statistics of research data.

Figure 2 : Statistic descriptive data for international Islamic index

|              | DJIMAPI  | DJIMCI   | DJIMEI   | DJIMJI   | DJIMMI   | DJIMU\$I  | DJIMWEI  |
|--------------|----------|----------|----------|----------|----------|-----------|----------|
| Mean         | 1822.249 | 2251.003 | 3431.576 | 1688.803 | 1024.371 | 2117.033  | 2244.381 |
| Median       | 1804.885 | 2222.565 | 3495.625 | 1644.350 | 982.7850 | 2116.230  | 2247.590 |
| Maximum      | 2237.809 | 2691.954 | 4221.511 | 2325.263 | 1365.280 | 2421.518  | 2673.420 |
| Minimum      | 1514.470 | 1759.420 | 2785.840 | 1338.920 | 930.0300 | 1804.500  | 1857.830 |
| Std. Dev.    | 204.2654 | 291.7865 | 344.4487 | 245.8260 | 105.9546 | 164.8060  | 226.7945 |
| Skewness     | 0.332494 | 0.003857 | 0.030488 | 0.749248 | 1.825588 | -0.008272 | 0.055933 |
| Kurtosis     | 2.045027 | 1.641622 | 2.369718 | 2.842513 | 5.131502 | 2.106777  | 1.798782 |
| Jarque-Bera  | 17.71723 | 24.14201 | 5.246073 | 29.70302 | 233.8565 | 10.44209  | 19.04199 |
| Probability  | 0.000142 | 0.000006 | 0.072582 | 0.000000 | 0.000000 | 0.005402  | 0.000073 |
| Sum          | 572186.0 | 706815.0 | 1077515. | 530284.0 | 321652.6 | 664748.3  | 704735.7 |
| Sum Sq. Dev. | 13059726 | 26648614 | 37135862 | 18914717 | 3513856. | 8501401.  | 16099390 |
| Observations | 314      | 314      | 314      | 314      | 314      | 314       | 314      |

Source : Proceed by author

**Research methods**

For this study the authors use Descriptive Statistics analysis, the test consists of Correlation and causality. Correlations and causality are used to study patterns and measure statistical relationships between two or more variables. In this study using two analytical models, the first Correlation analysis found by Francis Galton is an analytical technique included in one of the Measures of association measurements. This technique is useful for measuring the strength of the relationship between two variables (sometimes more

than two variables) with specific scales. And both Causality analyzes that Granger, C. W. J. (1969), catalyzed. [15] Causality analysis is actually a matter of probability. What is the probability of decreasing a person's depression after the treatment is given. However, in Indonesia, the problem of causality is rarely associated with probability. Does X affect Y we see from statistical inference and rarely involve causal inference [16-18].

**RESULT STUDY**

From this study the authors use a model of correlation and kausalias analysis to see the relationship and influence among the international 7 index. Correlation is an analytical technique included in one of the association measurement techniques (relations of association). An association measurement is a general term referring to a group of techniques in bivariate statistics that are used to measure the strength of the relationship between two variables [19-21]. In the actual correlation is not known terms of independent variables and dependent variables. Usually in the calculation used the symbol X for the first variable and Y for the second variable. In the example of the relationship between remuneration variables and job satisfaction, the remuneration variable is the variable X and job satisfaction is the variable Y [22-24].

Table 1 : Result correlation analisis for international Islamic index

|          | DJIMAPI     | DJIMCI      | DJIMEI      | DJIMJI      | DJIMMI      | DJIMU\$I    | DJIMWEI     |
|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| DJIMAPI  | 1           | 0.984848767 | 0.967814484 | 0.987688235 | 0.846899621 | 0.981744987 | 0.983520454 |
| DJIMCI   | 0.984848767 | 1           | 0.956905068 | 0.952581521 | 0.749624642 | 0.975010796 | 0.988243026 |
| DJIMEI   | 0.967814484 | 0.956905068 | 1           | 0.960749856 | 0.796372980 | 0.973629860 | 0.956748207 |
| DJIMJI   | 0.987688235 | 0.952581521 | 0.960749856 | 1           | 0.907586874 | 0.962588387 | 0.956110269 |
| DJIMMI   | 0.846899621 | 0.749624642 | 0.796372980 | 0.907586874 | 1           | 0.806728214 | 0.772462159 |
| DJIMU\$I | 0.981744987 | 0.975010796 | 0.973629860 | 0.962588387 | 0.806728214 | 1           | 0.981854470 |
| DJIMWEI  | 0.983520454 | 0.988243026 | 0.956748207 | 0.956110269 | 0.772462159 | 0.981854470 | 1           |

Source : Proceed by author

From table 1 above shows the correlation results for 7 international dow jones indexes. This correlation coefficient is useful as a measurement of covariant statistics or associations between two variables. The magnitude of the correlation coefficient ranges from +1 s / d -1. Correlation coefficient shows the strength (strength) of linear relationship and direction of relationship of two random variables. If positive correlation coefficient, then both variables have direct relationship. This means that if the value of variable X is high, then the value of variable Y will be high as well. Conversely, if the correlation coefficient is negative, then both variables have inverse relationships. Further explains that the value of variable X is high, then the value of variable Y will be low and apply vice versa. To facilitate an interpretation of the strength of the relationship between two variables the authors provide the criteria: • 0: No correlation between two variables •> 0 - 0.25: The correlation is very weak •> 0.25 - 0.5: Correlation is enough •> 0, 5 - 0.75: Strong correlation •> 0.75 - 0.99: Very strong correlation • 1: Perfect correlation. Then it can be concluded that the correlation that occurs in the international dow jones index is quite strong, because the correlation value ranges from 0.70 upwards [25-27].

But there is a fundamental difference between correlation and causality. If both variables are said to be correlated, then we are tempted to say that one variable affects another variable or in other words there is a causality relationship. The reality is not necessarily. The causality relationship occurs when the variable X affects Y. If both variables are treated symmetrically (the measurement value remains the same if the

role of the variables are exchanged) then even if the two correlated variables can not be said to have causality relation. Thus, if there are two correlated variables, there should be no causality relation.

Table 1 : Result granger causality analisis for international Islamic index

| Granger Causality Tests            |     |             |        |
|------------------------------------|-----|-------------|--------|
| Lags: 10                           |     |             |        |
| Null Hypothesis:                   | Obs | F-Statistic | Prob.  |
| DJIMCI not Granger Cause DJIMAPI   | 304 | 0.70265     | 0.7218 |
| DJIMAPI not Granger Cause DJIMCI   |     | 1.13977     | 0.3323 |
| DJIMEI not Granger Cause DJIMAPI   | 304 | 2.30991     | 0.0127 |
| DJIMAPI not Granger Cause DJIMEI   |     | 1.78276     | 0.0634 |
| DJIMJI not Granger Cause DJIMAPI   | 304 | 0.52636     | 0.8711 |
| DJIMAPI not Granger Cause DJIMJI   |     | 0.70710     | 0.7177 |
| DJIMMI not Granger Cause DJIMAPI   | 304 | 1.37815     | 0.1898 |
| DJIMAPI not Granger Cause DJIMMI   |     | 1.95408     | 0.0383 |
| DJIMU\$I not Granger Cause DJIMAPI | 304 | 2.16867     | 0.0198 |
| DJIMAPI not Granger Cause DJIMU\$I |     | 1.42662     | 0.1679 |
| DJIMWEI not Granger Cause DJIMAPI  | 304 | 0.42662     | 0.9331 |
| DJIMAPI not Granger Cause DJIMWEI  |     | 1.25844     | 0.2539 |
| DJIMEI not Granger Cause DJIMCI    | 304 | 1.81641     | 0.0575 |
| DJIMCI not Granger Cause DJIMEI    |     | 1.12557     | 0.3427 |
| DJIMJI not Granger Cause DJIMCI    | 304 | 1.23805     | 0.2663 |
| DJIMCI not Granger Cause DJIMJI    |     | 1.74309     | 0.0711 |
| DJIMMI not Granger Cause DJIMCI    | 304 | 1.48365     | 0.1448 |
| DJIMCI not Granger Cause DJIMMI    |     | 1.19590     | 0.2933 |
| DJIMU\$I not Granger Cause DJIMCI  | 304 | 2.33220     | 0.0118 |
| DJIMCI not Granger Cause DJIMU\$I  |     | 1.82409     | 0.0562 |
| DJIMWEI not Granger Cause DJIMCI   | 304 | 0.37885     | 0.9553 |
| DJIMCI not Granger Cause DJIMWEI   |     | 1.46815     | 0.1508 |
| DJIMJI not Granger Cause DJIMEI    | 304 | 1.55470     | 0.1199 |
| DJIMEI not Granger Cause DJIMJI    |     | 2.34770     | 0.0112 |
| DJIMMI not Granger Cause DJIMEI    | 304 | 2.38101     | 0.0101 |
| DJIMEI not Granger Cause DJIMMI    |     | 1.68653     | 0.0834 |
| DJIMU\$I not Granger Cause DJIMEI  | 304 | 1.94785     | 0.0390 |
| DJIMEI not Granger Cause DJIMU\$I  |     | 0.85997     | 0.5713 |

|                                    |     |         |        |
|------------------------------------|-----|---------|--------|
| DJIMWEI not Granger Cause DJIMEI   | 304 | 0.57453 | 0.8344 |
| DJIMEI not Granger Cause DJIMWEI   |     | 1.26628 | 0.2492 |
| DJIMMI not Granger Cause DJIMJI    | 304 | 2.59931 | 0.0050 |
| DJIMJI not Granger Cause DJIMMI    |     | 1.33877 | 0.2093 |
| DJIMU\$I not Granger Cause DJIMJI  | 304 | 1.61654 | 0.1013 |
| DJIMJI not Granger Cause DJIMU\$I  |     | 1.89762 | 0.0453 |
| DJIMWEI not Granger Cause DJIMJI   | 304 | 0.46952 | 0.9089 |
| DJIMJI not Granger Cause DJIMWEI   |     | 1.33401 | 0.2117 |
| DJIMU\$I not Granger Cause DJIMMI  | 304 | 0.93625 | 0.5001 |
| DJIMMI not Granger Cause DJIMU\$I  |     | 3.22009 | 0.0006 |
| DJIMWEI not Granger Cause DJIMMI   | 304 | 2.35350 | 0.0110 |
| DJIMMI not Granger Cause DJIMWEI   |     | 0.55523 | 0.8495 |
| DJIMWEI not Granger Cause DJIMU\$I | 304 | 0.82646 | 0.6034 |
| DJIMU\$I not Granger Cause DJIMWEI |     | 1.50359 | 0.1374 |

Source : Proceed by author

But slightly different from the test of causality that is done. In some provisions there are those who argue that "correlation does not imply causation". This means that correlation can not be used validly to see the relationship of causality in variables. In the correlation of the aspects underlying the existence of relationships among variables may be unknown or indirect. Therefore, by establishing a correlation in relation to the variables studied will not provide sufficient conditions to establish causality relationships into those variables. However, it does not mean that correlation can not be used as an indication of causality between variables. Correlation can be used as a proof of the possibility of a causal relationship but can not give an indication of what causality relation is if it occurs in the variables studied, for example the recursive model, where X affects Y or non-recursive, eg X affects Y and Y affects X. By to identify causality relationships can not simply be viewed with correlation glasses but should use more precise models, such as regression, path analysis or structural equation modeling. So from the results of table 2, it can be explained there is no two-way causal relationship, and only a few variables that have a one-way relationship and the rest is not there at all. This can be seen from the significant value generated in Table 2.

**CONCLUSION**

There is a difference and a fundamental relationship between correlation analysis and regression in terms of usefulness, correlation analysis is used to find the direction and strength of the relationship between two variables, while the regression analysis is used to predict how far the value of the dependent variable changes when the value of the independent variable is known. Another difference is the correlation analysis of its position between the equivalent variables, while the regression analysis (simple linear) position between variables is not equivalent (one is the dependent variable and the other independent variables). Use of Correlation and Regression Analysis. In most natural phenomena, estimating the average population, or testing the difference of two averages with statistical test techniques, both

requiring specific (parametric) and non-strictly distributed assumptions (nonparametric) assumptions are inefficient and ineffective.

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