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Predicting Global Takaful Assets

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The Takaful industry is one of the important pillars of the global Islamic financial system. However, the development of global Takaful assets in recent years shows fluctuating dynamics and tends to slow down. This study aims to predict the development of Global Takaful assets in the coming period using three forecasting methods, namely Trend Analysis (regression over time), Exponential Smoothing with Trend, and Multiplicative Decomposition. The data used is secondary data on Takaful Global's total assets for the period 2012–2017 sourced from the Global Islamic Finance Report (GIFR). The forecasting process is done with the help of QM for Windows software version 3. The results of the study show that all methods resulted in a projected decline in Global Takaful assets in the 2018–2022 period. Based on the Mean Absolute Percentage Error (MAPE) value, the Multiplicative Decomposition method has the highest level of accuracy compared to other methods. These findings indicate the need for a strategy to strengthen the Global Takaful industry, both in terms of regulation, product innovation, and increasing Islamic financial literacy.

Keywords: Takaful Global; Asset Forecasting; Trend Analysis; Exponential Smoothing; Multiplicative Decomposition

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INTRODUCTION

The global Islamic finance industry has grown rapidly as an alternative to the conventional financial system that is considered more stable, inclusive, and socially justice-oriented. One of the main components in the Islamic financial ecosystem is sharia insurance (takaful), which functions as a risk mitigation instrument based on the principle of ta'awun (help-help) and risk sharing (risk sharing) between participants (Archer & Karim, 2007). The existence of takaful is not only important in the context of individual and corporate protection, but also contributes to the stability of the Islamic financial system as a whole.

Despite having a strong philosophical and normative foundation, the development of the Global Takaful industry has not fully aligned with the growth of other Islamic financial sectors, especially Islamic banking and Islamic capital markets. Several international reports show that the contribution of takaful assets to total global Islamic financial assets is still relatively small and tends to stagnate in recent years (IFSB, 2018; GIFR, 2019). This condition indicates that there are structural challenges that hinder the expansion of the takaful industry at the global level.

Empirically, the Global Takaful industry faces various obstacles, including the lack of economies of scale, the low level of literacy and inclusion of Islamic insurance, limited capital, and the complexity of different regulations between countries (Billah, 2019). In addition, the stiff competition with conventional insurance—which is already established in terms of distribution networks, product innovation, and operational efficiency—is a challenge for takaful operators (El-Gamal, 2006). These factors have the potential to affect the financial performance and asset growth of the takaful industry in the long term.

In an increasingly dynamic global context, historical data-based analysis is crucial to understand the direction of takaful industry development in the future. One of the quantitative approaches that is widely used in economics and financial studies is time series forecasting, which aims to project the value of a variable based on past patterns, such as trends and variations of data (Hyndman & Athanasopoulos, 2018). In the financial industry, asset forecasting not only serves as a predictive tool, but also as the basis for policy formulation, risk management, and strategic planning.

However, empirical studies that specifically address Global Takaful asset forecasting are still relatively limited, especially those comparing multiple forecasting methods simultaneously. Most previous research has focused more on the conceptual, regulatory or efficiency performance aspects of takaful companies, while predictive analysis based on time series data is still rare. In fact, the use of more than one forecasting method is important to obtain a more comprehensive picture and reduce the bias of prediction results (Makridakis et al., 1998).

Based on this background, this study aims to predict the development of Global Takaful assets using three forecasting methods, namely Trend Analysis (regression over time), Exponential Smoothing with Trend, and Multiplicative Decomposition. The selection of these three methods is based on their ability to capture medium- to long-term data trends and variations. In addition, this study also evaluates the level of accuracy of each method using the Mean Absolute Percentage Error (MAPE) indicator, so that the most representative forecasting method for Global Takaful asset data can be identified.

Thus, this research is expected to make an academic contribution in enriching the empirical literature on the takaful industry, as well as a practical contribution for regulators and industry players in formulating a more sustainable takaful development strategy at the global level.

METHOD

The data used is the total global Tafakul Assets from 2012 to 2017. Data are taken from GIFR. Meanwhile, the prediction methods used in this study are 3 forecasting methods, namely: (1) Trend analysis method (regress over time), (2) Exponential Smoothing with Trend method, and (3) Multiplicative Decomposition method. The software used as a tool is QM version 3. Forecasting methods are techniques used to predict future values (such as demand, sales, tourism arrivals, financial assets, or industry growth) based on historical data, patterns, and assumptions.

Forecasting plays a crucial role in economic and financial analysis, as it provides a systematic approach to anticipating future trends based on historical data and underlying structural patterns. Accurate forecasting supports evidence-based decision-making in policy formulation, business strategy, and resource allocation. In the context of tourism, Islamic finance, and socio-economic development, forecasting methods are widely applied to project demand growth, asset accumulation, and industry performance (Makridakis, Wheelwright, & Hyndman, 1998).

Broadly, forecasting methods can be classified into qualitative and quantitative approaches. While qualitative forecasting relies on expert judgment and scenario construction, quantitative forecasting employs mathematical and statistical models to extrapolate future values from observed data. This study adopts quantitative time-series forecasting methods, given the availability of historical data and the objective to capture systematic patterns over time.

RESULTS

The results of Tafakul Global's prediction calculation for the future are as attached in the following table.

Table 1. Global Tafakul Prediction Calculation Results (USD Billion)

	Trend	Multiplicative Decomposition	Exponential Smoothing
2012	46	46	46
2013	44	44	44
2014	43	43	43
2015	36	36	36
2016	36	36	36
2017	31	31	31
2018	28,73	30,29	28,85
2019	25,7	25,73	25,5
2020	22,68	24,45	
2021	19,65	20,24	
2022	16,62	18,6	
MAP	0,03	0,02	0,06

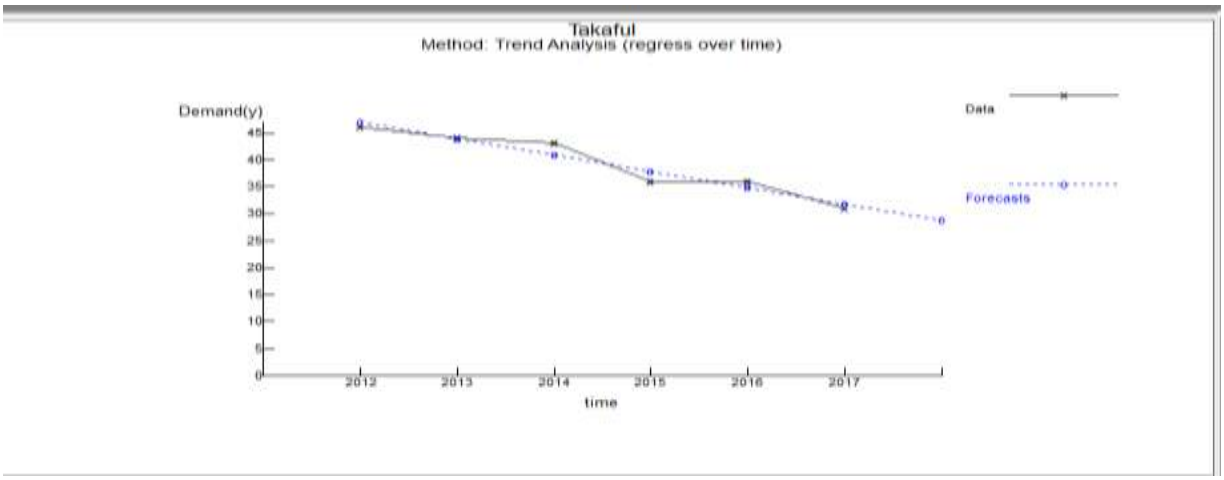

Figure 1. Trend Analysis

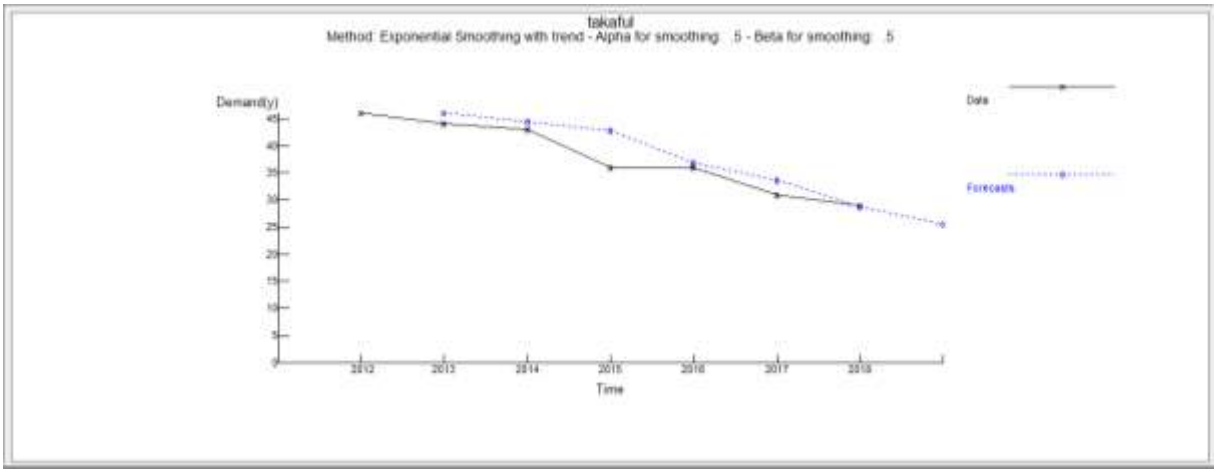

Figure 2. Exponential Smoothing With Trend

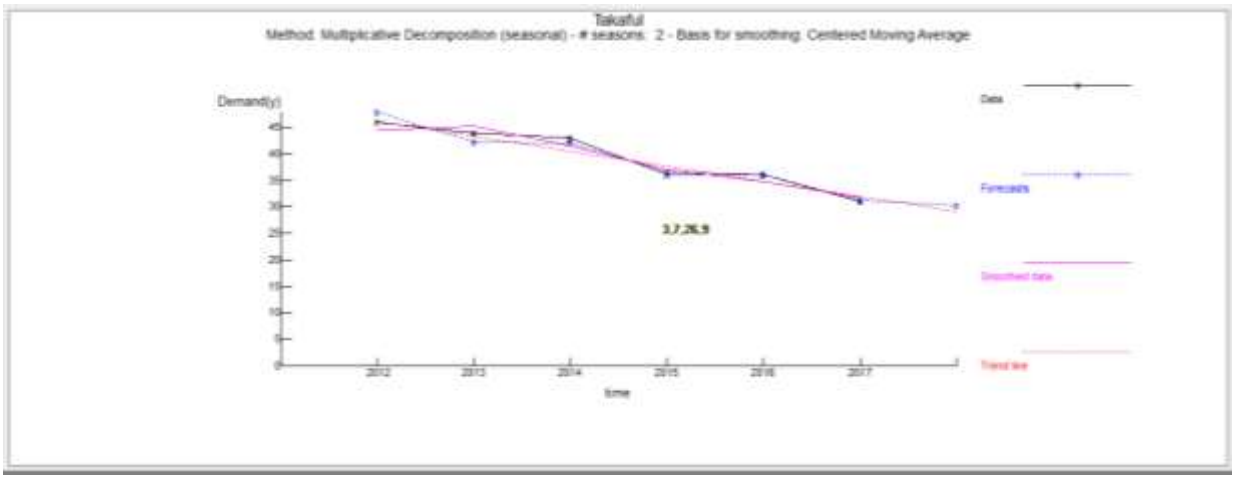

Figure 3. Multicative Decomposition

The results of Takaful Global's asset forecasts show a consistent downward trend throughout the observation and projection period. Based on historical data from 2012–2017 sourced from the Global Islamic Finance Report (GIFR), the total value of Takaful Global's assets decreased from USD 46 billion in 2012 to USD 31 billion in 2017. This pattern is the main basis for the formation of forecasting models using three different forecasting approaches, namely Trend Analysis, Exponential Smoothing with Trend, and Multiplicative Decomposition.

The three methods produce a relatively uniform projection direction, namely the decline in the value of Global Takaful assets in the 2018–2022 period. This indicates that the historical data structure is dominated by a downward trend component, while the seasonal element is relatively insignificant. In 2018, the predicted value was in the range of USD 28.73–30.29 billion, then continued to decline until it reached the range of USD 16.62–20.24 billion in 2022, depending on the method used.

In terms of model accuracy, the evaluation using Mean Absolute Percentage Error (MAPE) showed that the Multiplicative Decomposition method had the lowest error rate (MAPE = 0.02), followed by Trend Analysis (MAPE = 0.03), and Exponential Smoothing with Trend (MAPE = 0.06). These findings indicate that the Multiplicative Decomposition method is better able to capture the data structure of Takaful Global's assets more precisely, although the historical data used is relatively short.

The advantages of the Multiplicative Decomposition method can be explained by its ability to separate the components of trends and relative variations of the data, resulting in a more stable projection and closer to historical realization. In contrast, the Exponential Smoothing with Trend method tends to produce a larger deviation, which is reflected in the highest MAPE values.

The forecast results can be interpreted into three main scenarios, namely: Pessimistic scenario, represented by the results of Trend Analysis with the lowest predictive value (e.g. USD 28.73 billion in 2018); Moderate/realistic scenario, represented by the Multiplicative Decomposition method (USD 30.29 billion in 2018); The optimistic scenario, which is reflected in the Exponential Smoothing with Trend method (USD 28.85 billion in 2018).

The differences between scenarios are relatively not too large in the initial period of projection, but are widening in the medium-term period (2020–2022). This reflects increasing structural uncertainty in the Global Takaful industry, both in terms of regulation, market penetration, and competitiveness with conventional insurance.

CONCLUSION

Based on the predicted results, in the 2019 period, it is estimated that the total value of Tafakul Global will be in the range of Rp 28.73 trillion to Rp 30.29 trillion. From these results, the pessimistic prediction value is at IDR 28.73 trillion, the optimistic prediction value is IDR 28.85 trillion and the realistic prediction value is IDR 30.29 trillion. Substantively, the projected downward trend in Global Takaful assets indicates a serious challenge in the sustainability of the growth of the Takaful industry at the global level. Factors such as low sharia insurance literacy, limited product innovation, and competitive pressure from conventional insurance can be relevant explanations. Therefore, the results of this forecast are not only

numerical but also provide policy signals for regulators and industry players to make strategic interventions.

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