AMAZON: A FRACTIONAL LONG RUN EQUILIBRIUM RELATIONSHIP BETWEEN GOOGLE TRENDS, SALES AND CLOSING PRICES.

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Introduction: There is no doubt about the impact that Amazon has had on our way of buying, on the offer of products and on the distribution of goods. As a digital company (although it has a few physical points of sale), we can relate three main concepts:

- The use of the brand name in Google Trends. This tool measures the terms that users search for, segmenting by country and date. Through these figures we can know when and how many times the term "Amazon" has been used in searches around the world.
- The company's sales figures. This concept has a very direct relationship with the previous one. As an online company where purchases are made by accessing the website, we can establish a logical step between: Search, Visit to the website and Purchase.
- The data on the company's share price. This data is of vital importance to know the health and value of the company in an objective way and within the market parameters.

Objectives: The goal of this analysis is to examine the long run relationship between Amazon's sales, closing prices and brand awareness through Google Trends.

Methodology: To complete the objective, we use time series techniques based on fractional integration and cointegration. The data and its sources are as follows:

- The use of the brand "Amazon" in searches in Google; Google Trends, 2020.
- Amazon net sales: Thomson Reuters Eikon-Datastream.
- Share Price of Amazon: Yahoo Finance, 2020.

We use quarterly data, and the sample period examined in the three series goes from 2004Q1 to 2020Q4, seasonally unadjusted.

Results and conclusions: The results indicate that the three series display a high degree of heterogeneity with respect to the degree of integration; however, the unit root null hypothesis cannot be rejected in any of the three series.

We also observe a high degree of seasonality in the Google brand awareness and sales but not in the share price movements.

Testing for a long run cointegrating relationship among the three variables, we find that there exists such a long run relation with shocks displaying transitory shocks and disappearing relatively fast.

We find evidence of cointegration if the errors are autocorrelated.

We also found that the results support the hypothesis of a long run equilibrium relationship among the three variables, with long run commovements among the three variables.

PALABRAS CLAVE

AMAZON, GOOGLE TRENDS, LONG MEMORY, PERSISTENCE, SALES