

## **The Analysis Of The Relationship Between The Automobile Sales And Automotive Industry Stock Prices By Granger Causality Test: Istanbul Stock Exchange Case**

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### **Extensive Summary**

#### **Introduction**

In general, automotive sector is a sector working for the production of road vehicles and the production of parts required for the production of vehicles. The automotive sector is seen as one of the most important sectors for all countries of the world. It is also at a leading position especially in the industrialized countries. The fact that the automotive industry is a leading sector is due to the fact that it is in a relation with many other sectors. The automotive sector is closely related to many sectors such as petro-chemistry, iron, steel and rubber sectors. The automotive sector is the buyer in these sectors. Therefore, the size of the automotive sector plays an important role in the development of these sectors. When the automotive sector is in a seller position, it is closely related to some other sectors such as tourism, agriculture, construction and transportation. Therefore, changes that might occur in the automotive sector may affect other sectors as well.

As in all sectors, the automotive sector has an important role in the capital market as well as being effective in the real sector. On the other hand, it is an obvious fact that the real sector and the capital sector are not totally related. In the present research, a comparison will be made between real market data and capital market data for the automotive sector. Besides, it will be investigated whether there is a relationship between new automobile sales and share earnings in automotive companies. In literature, it is considerable that there have been a number of studies in the automotive sector that address the relationship between stock prices and macroeconomic variables such as inflation, interest rates, exchange rates and especially crude oil prices, whereas there has been a limited number of studies carried out on the relationship between automobile sales and the automobile sector share prices. Moreover, all of the existing studies have been based on studies abroad, and it was seen that there has been no study related to this topic in our country. This is the reason why this research topic was

chosen. Therefore, it is thought that the current research will contribute to fulfill a need in the literature.

### **Data and Method**

In the research, it was planned to carry out a research on the demand of non-commercial customers and the related stock values in the selection of data for the automotive sector. In this context, the relationship between selected stock prices and total values for car sales in Turkey was examined.

The data set used in the research is as follows:

- DOAS: The average annual stock price in Doğuş Automotive (2008-2017)
- TOASA: The average annual stock price in Tofaş (2008-2017)
- FROTO: The average annual stock price in Ford Otosan (2008-2017)
- SATIS: The total number of new cars sold in Turkey (2008-2017)

Share prices were taken from BIST official website, while the total number of new cars sold in Turkey was taken from the OICA website. While including the data in the analysis, their logarithms were taken.

After checking whether the time series were static or not, it was decided that the most appropriate test was the Granger Causality test, since the data received were to be static at different levels.

### **Findings and Conclusion**

Before the Granger causality test, differences were taken at the level where all variables were static. According to the 1st and 2nd delay values in Granger causality test results, no statistically significant correlation was found between stock prices and car sales figures. As a result of the research, no statistically significant difference was found out between real sector data and share prices. This is different from the previous studies in the literature because in this limited area of work, there was a significant and positive correlation between automobile sales and share earnings in automobile company. Therefore, this research is incompatible with the literature. This may be due to the fact that shares do not act according to the real sector and there are many factors affecting share prices. It can be said that the figures for stock exchange securities do not totally reflect the values for the real sector companies in Turkey. The capital market rules and the real sector rules are different from each other. This difference eliminates the relationship between the two sectors.