

# **Strategic Outlook in Business and Finance Innovation**

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# **Strategic Outlook in Business and Finance Innovation: Multidimensional Policies for Emerging Economies**

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## Chapter 1

# The Effects of Innovation on the Companies' Stock Values: An Econometric Analysis for Turkey

*Hasan Dinçer and Hüsne Karakuş*

### Abstract

Innovation means innovation. It enables companies to grow and compete with other companies. However, innovation studies also increase the welfare level of the countries. One of the most important topics in innovation studies is research and development (R&D). R&D enables companies to identify their current problems and lay the groundwork for new products and services. In this way, it contributes to the profit of the companies. The purpose of this study is to determine the effect of innovation on the share value of the company. In the study, the data are collected from Turkey during the period 1991–2019. However, the study was tested by Engle–Granger Cointegration analysis. As a result, it has been determined that there is a long-term relationship between R&D expenditures and the company's share value. In this context, companies need to focus on R&D expenditures to increase their share values. For this issue, they need to increase their liquidity. In addition, the R&D departments in the company need to be increased. Companies need to prepare a separate budget for R&D studies.

*Keywords:* Innovation; research and development (R&D); stock; share value; Engle–Granger Cointegration; Turkey

### 1.1. Introduction

The concept of innovation has many definitions in the literature. There are new products and services at its core. However, its main purpose is to provide

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superiority to competitors and to offer solutions to existing problems. Therefore, innovation is important for companies (Kahn, 2018). The subject of innovation is also important for countries. Countries need to carry out innovation studies to develop economically and to compete with other countries. In this way, individuals and societies are provided to live under more favorable conditions (Dinçer, Yüksel, Adalı, & Aydın, 2019; Göker, 2001). Also, innovation benefits the companies in many ways. Innovative companies reduce their costs, outperform their competitors, and increase their market value. Along with this, the profitability of innovative companies is also increasing. Companies that make a profit for investors are important. Therefore, companies need to give the necessary importance to innovation (Mazur, Barmuta, Demin, Tikhomirov, & Bykovskiy, 2016; Uzkurt, 2010).

Stocks are valuable documents. It is a document showing that investors are partners of the company. Joint stock companies and limited companies issue their shares. These companies issue shares to earn income (Aktaş, 2008). The value of stocks is determined based on the supply and demand in the market, economic developments, and developments about the company. However, investors' expectations also affect the share value (Cutler, Poterba, & Summers, 1988). The policies pursued by the company and its innovations affect the profitability of the company. Profitable companies are valuable to investors (Woolridge & Snow, 1990). The stock market enables companies to develop. Companies provide funds by issuing shares. In this way, it generates income without paying interest. However, the fact that the shares of the companies are traded on the stock exchange increase the trust in the company (Canbaş & Kandır, 2009; Topuz, 2010). It provides companies with easy funding. In addition to all these advantages, companies also issue foreign currency income by issuing shares (Yeşildağ & Özen, 2015).

Research and development (R&D) is one of the important sources of innovation. Companies conduct research to produce new products and services, and development studies are carried out with the data obtained (Ertuğrul, 2020). The profitability of developing companies increases through R&D studies (Baumann & Kritikos, 2016). This increases the market value of the company. Companies that make a profit for investors are important. The shares of valued companies are also positively affected. This is an important issue for investors. For this reason, companies need to give importance to R&D studies to increase their values and to be preferred by customers (Chan, Martin, & Kensinger, 1990).

The purpose of this study is to determine the effect of innovation on the share value of the company. For this purpose, share values with the value of R&D expenditures in Turkey are subjected to evaluation. However, the study was tested by Engle–Granger cointegration analysis. This study has many peculiarities compared to the studies in the literature. First, there is little in the literature on the relationship between innovation and the company's share value. In addition to all these issues, the preference of Engle–Granger cointegration analysis increases the specificity of the study. Therefore, it is thought that this study will contribute to the literature.

## 1.2. Literature Review

Innovation is all new ideas and inventions. Companies aim to develop new products or services to increase their competitive powers. In this way, companies increase their performance and values. Accordingly, companies should pay attention to innovation efforts. In the literature, this issue has been emphasized by many researchers. For example, Špacek and Vacík (2016) investigated the relationship between innovative process management and company value. Pharmaceutical companies were included in the study. It was determined that companies developing innovative products and carrying out innovative activities increase the value of companies. Like these studies, Vanelander (2016) examined the impact of innovation practices on company goals. In this study, the ports were evaluated. It has been determined that innovative efforts are important for companies to reach their goals. Thanks to innovation studies, the current situation of the company has been determined (Fernández-Portillo, Hernández-Mogollón, Sánchez-Escobedo, & Pérez, 2017). Rajapathirana and Hui (2018) investigated the relationship between innovations and firm performance. The insurance companies in Sri Lanka were included in the study. Finally, it was stated that there is a strong and important relationship between innovative practices and firm's performance.

Innovative studies carried out within the company are of different types. Depending on this situation, the effect of innovative studies on company value also changes. There are many studies on this subject in the literature. Lichtenthaler (2016) examined the effect of innovations on company's performance. It has been determined that product and process innovation affects the performance of companies. However, it was emphasized that different innovations should be made for companies' performances. In parallel with these studies, Jajja, Kannan, Brah, and Hassan (2017) evaluated innovation strategy and company's performance. The related study was tested by structural equation model and linear regression analysis. It is identified that the innovations made for the products affect the company's performance positively. Because it was emphasized that innovations should be made in the procurement process. It was stated that the buyers were positively affected by this situation. Silva, Styles, and Lages (2017) researched technological and marketing-oriented innovation studies. It is stated that the innovations made in the technological field have a positive effect on the company's performance.

In addition, it was stated that there is a significant relationship between the innovative studies in the field of marketing and the value of the company. Innovative studies carried out by companies in the environmental and organizational field affect the performance of the company in the long run. However, the value of companies increases in the eyes of customers (Camisón & Villar-López, 2014; Küçükoğlu & Pinar, 2015). However, Oke (2007) examined the types of innovation in service companies. In the study, UK companies were included in the review. The relevant study has been tested with the survey method. As a result, service sectors need to focus on product innovation. These innovations need to progress radically and increasingly.

The company decides to innovate by considering its current values. This is one of the important issues in determining the market values of companies. In the literature, this issue has been studied by many researchers. For example, [Mustafa and Yaakub \(2018\)](#) investigated the impact of innovations on small and medium enterprises (SMEs) in Malaysia. However, the study has been tested with a survey method. As a result, it has been stated that the performance of companies without innovative studies is low. However, it was emphasized that SMEs should improve their applications in technology and innovation enhancement. It has been determined that the performance of companies has been positively affected.

In addition to these studies, [Dong, Hirshleifer, and Teoh \(2017\)](#) analyzed the impact of overvalued companies on the firm's innovation. As a result, it was determined that firms that are overvalued in the market are more eager to innovate. However, the value of enthusiastic firms has been started to increase. On the other hand, companies with low value in the market are less willing to do innovation work. This situation causes companies not to develop in the long run ([Coad & Rao, 2006](#)). In order for companies to be eager to innovate, some support should be provided. In particular, financing must be provided for companies to conduct R&D. In this way, companies will be more eager to innovate ([Hall & Lerner, 2010](#)).

Innovative works have a positive effect on company's performance. For this reason, companies and employees should give importance to innovative studies. In the literature, this issue has been emphasized by many researchers. [Pour and Ghanbari \(2017\)](#) investigated the impact of innovative strategy on environmental, economic, and social performances. In the study, 856 companies registered in Taiwan Stock Exchange between 2011 and 2015 are included in the scope of the study. As a result, it was stated that the environmental, social, and economic effects of innovation studies are positive. Therefore, it was emphasized that the importance of innovation should be transferred to internal employees. In addition to these studies, [Semuel, Siagian, and Octavia \(2017\)](#) investigated the effect of leadership and innovation strategy on company value. In the related study, hotels in Surabaya, Indonesia were included in the scope of the study. However, the study was examined by statistical analysis. It was emphasized that innovation indirectly affects the performance of companies. Therefore, it was stated that different innovative strategies should be realized. [Przychodzen and Przychodzen \(2015\)](#) investigated the performance of companies with innovation in their study. In the study, public companies in Poland and Hungary in the period 2006–2013 were included. They reached a conclusion that the return of equity of firms that innovate is high.

Companies need to pay attention to the innovative efforts in order to increase their share and market values. For this, it must make R&D investments. R&D has an important share in increasing the profitability of companies. There are many studies on this subject in the literature. [Ezzi and Jarbouï \(2016\)](#) investigated the impact of innovation strategy on the financial, social, and environmental performance of companies. In the relevant study, 96 Tunisian companies were included in the review. As a result, it has been determined that there is a positive relationship between R&D investments and the performance of companies.

However, while there is a positive relationship between innovation and financial and social dimensions, it has been stated that there is an environmentally negative relationship.

Furthermore, [Huang, Chiu, Lin, and Chen \(2018\)](#) investigated the relationship between corporate innovation and company's performance. In this study, Taiwan Stock Exchange was included in the review. The study was tested with the structural equation model. It has been determined that the R&D studies carried out in the field of innovation positively affect the performance of the company. It has been stated that the companies have developed especially in terms of accounting and market value. In parallel with these studies, [Liao, Wang, Chuang, Shih, and Liu \(2010\)](#) focused on R&D in innovation. This study was supported by a literature review. However, the model was established in the study. As a result, it was emphasized that R&D studies are important for companies to increase their performance.

Innovative studies increase the profitability of the companies. The companies that make a profit have a lot of buyers. There are many studies on innovation and profitability in the literature. [Hojnik and Ruzzier \(2016\)](#) investigated the impact of innovations on the financial performance of companies. In this study, Slovenia was included in the scope of the study. It is determined that innovation studies increase the growth and profitability of the companies. Moreover, [Mursalim, Alamzah, and Sanusi \(2015\)](#) examined the relationship between innovation and company's value. In this study, the Capital Market in Indonesia was included in the scope of the study. However, the study was tested with causality analysis. Finally, it was stated that investment decisions made for innovation affect the values of companies positively. However, it has been determined that the company increases its profitability. In his study, [Oke, Walumbwa, and Myers \(2012\)](#) examined the relationship between innovation strategy and revenue growth of firms. Innovation strategies were determined to affect the performance of companies. Also, it was emphasized that the innovation strategies determined for human resources policy increased the income of the companies.

Another important point is that innovations attract investors. Therefore, investors are interested in innovative companies. In the literature, this issue has been emphasized by many researchers. [Chang, Fu, Low, and Zhang \(2015\)](#) examined the relationship between corporate innovation studies and stock. In the study, the NBER Patent numbers between 1998 and 2003 were included in the evaluation process. The study was evaluated by causality analysis. As a result, it was stated that the determination of the stock value is determined by the reaction of the people to the innovation. Similar to these studies, [Qamruzzaman and Wei \(2018\)](#) investigated innovation, stock market development, and financial issues. In the study, Bangladesh in the period of 1980–2016 was included in the scope of examination. However, the study has been tested with Granger causality analysis. As a result, it was stated that innovations contributed to the development of exchanges. It was emphasized that this situation attracted the attention of investors. Unlike these studies, [Yüksel \(2017\)](#) investigated the effect of R&D expenses on export and economic growth. European Union countries between 1996 and 2014 are included in the scope of the study. Also, the study was tested by

Dumitrescu Hurlin panel causality analysis. It is determined that countries with high export volume spend more on R&D to improve themselves.

According to the results of the literature review, the topic of innovation has been handled by many researchers. However, most of the studies were tried to be tested with structural equation model and causality analysis. In general, it is seen that innovation studies increase the performance of the company. Therefore, there is a need for studies that will determine the effect of innovation studies on the share value of companies. In this study, it is aimed to determine the effect of innovation on company's share value.

### **1.3. Methodology**

In the analysis process of this study, Engle–Granger cointegration analysis will be used. Engle–Granger cointegration analysis determines the long-term relationship between the variables in the study. At this stage, the variables are first subjected to unit root testing. In this way, stationarity of variables is determined. This analysis has several prerequisites. Firstly, the variables subject to the analysis should not be static at the level. Both variables must be first-order aware (Alhan & Yüksel, 2018). For the method to be valid, it must pass this prerequisite. These variables are then subjected to regression analysis. As a result of the regression analysis, data set related to error terms are obtained. In the last process of the analysis, a unit root test is applied to the data set again. If the error term variable in question is stationary, there is a long-term relationship between the two variables subject to analysis (Li, Tang, & Wang, 2020; Yüksel, Dinçer, & Kıyak, 2019).

### **1.4. An Evaluation on Turkey**

In this part of the study, an analysis was made on Turkey. In this regard, firstly, innovation and information is given about the stock market for Turkey. After that, the results of the analysis are included.

#### **1.4.1. Data Set and Scope**

R&D expenditures enable companies to grow and compete with other international companies. However, it allows companies to keep pace with the changing world. Turkey is one of the countries that give the importance of R&D in recent years (Bozkurt, 2015). The first innovation studies took place in Turkey in 1990. In other words, it emerges in the period when globalization is gaining momentum. However, it lags behind OECD and EU countries (Özçelik & Taymaz, 2008). Institutions and organizations such as TUBITAK, banks, the ministry of trade, and technoparks provide support to innovation efforts. Therefore, the existence of these organizations is important (Kılış, 2017; Uzun, 2001). Giving importance to Turkey's innovation efforts in economic development is to be in place. However, companies need to focus on innovation to increase their profits and employment (Athreye, Tuncay-Celikel, & Ujjual, 2014; Ulku & Pamukcu, 2015).

The stock market in Turkey is one of the important issues. In this framework, the share means partnership. Stocks are valuable documents issued by anonymous, limited, or private sectors. Companies that issue stocks aim to generate income (Aktaş, 2008; Cutler et al., 1988). Additionally, each share has a price. These prices are shaped according to the supply and demand in the market. Investors purchase shares by making technical analysis. In addition, it affects the share value in the developments in companies (Yeşildağ & Özen, 2015). Issues such as the company being a partner and being involved in various projects affect the share value of the company. This situation attracts investors. In addition, the stock market contributes to the development of the country's economy and companies. Accordingly, important issues in the stock market need to be examined (Woolridge & Snow, 1990).

#### 1.4.2. Analysis Results

Engle–Granger cointegration analysis was done in the study. Therefore, firstly stocks traded, and R&D expenditure variables were subjected to unit root test. These variables unit root test results are given in Table 1.1.

Unit root test results for stocks traded and R&D expenditure variables are given in Table 1.1. According to the results, the first row has been determined to be stationary. Therefore, Engle–Granger cointegration analysis can be used. Because, as the first prerequisite of Engle–Granger cointegration analysis, the variables must be first-orderly stable. These variables pass the prerequisite.

Table 1.2 shows the results of Engle–Granger cointegration analysis for stocks traded and R&D expenditure variables. According to the results, there is a long-term relationship between the variables of stocks traded and R&D expenditure

Table 1.1. Unit Root Test Results of Variables.

Variables	Probability Values (Level)	Probability Values (First Difference)	Unit Root Test Results
Stocks Traded	0.0334	0.0001	The first difference is stationary
R&D Expenditure	0.2435	0.0000	The first difference is stationary

Source: Generated by authors.

Table 1.2. Engle–Granger Cointegration Analysis Results.

Probability Value of Unit Root Test of Error Terms	Engle–Granger Cointegration Analysis Results
0.0012	There is a long-term relationship between R&D studies and stock value

Source: Generated by authors.

in Turkey, because error unit probability value of error terms is 0.0012. To have a long-term relationship between the variables, the unit root test probability value of the error terms must be less than 0.05 reference value.

## 1.5. Conclusion

Innovation is important for the development of countries and companies. Innovation especially enables companies to grow and be one step ahead of their competitors. However, it enables countries and companies to keep pace with the globalizing world. One of the important sources of innovation is R&D. Companies or countries carry out R&D studies and create solutions for their current problems. In this way, it becomes able to compete with its competitors. Developments in the field of innovation affect the value of companies. In this context, the purpose of this study is to determine the effect of innovation on the share value of the company. In the study, data between 1991 and 2019 period for Turkey were taken into consideration. However, the study was tested with Engle–Granger cointegration analysis. As a result, it has been determined that there is a long-term relationship between R&D expenditures and the company's share value. Regarding these results, it can be understood that it should focus on R&D expenditures. For this, it should increase its liquidity. With the help of this situation, the R&D departments in the company need to be increased. Companies need to prepare a separate budget for R&D studies.

## References

- Aktaş, M. (2008). *Hisse Senedi Seçimi ve Hisse Senedi Seçiminde Etkili Olan Finansal Oranların Belirlenmesine Yönelik İMKB Şirketleri Üzerinde Bir Uygulama*. Doctoral dissertation, Doktora Tezi, İstanbul Üniversitesi Sosyal Bilimler Enstitüsü.
- Alhan, O., & Yüksel, S. (2018). Kadın Çalışanların Banka Büyüklüğü ve Karlılığına Etkisi: Engle-Granger Eş Bütünleşme Analizi İle Türkiye Üzerine Bir Uygulama. *İş'te Davranış Dergisi*, 3(2), 140–147.
- Athreye, S., Tuncay-Celikel, A., & Ujjual, V. (2014). Internationalisation of R&D into emerging markets: Fiat's R&D in Brazil, Turkey and India. *Long Range Planning*, 47(1–2), 100–114.
- Baumann, J., & Kritikos, A. S. (2016). The link between R&D, innovation and productivity: Are micro firms different? *Research Policy*, 45(6), 1263–1274.
- Bozkurt, C. (2015). R&D expenditures and economic growth relationship in Turkey. *International Journal of Economics and Financial Issues*, 5(1), 188.
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891–2902.
- Canbaş, S., & Kandır, S. Y. (2009). Investor sentiment and stock returns: Evidence from Turkey. *Emerging Markets Finance and Trade*, 45(4), 36–52.
- Chan, S. H., Martin, J. D., & Kensinger, J. W. (1990). Corporate research and development expenditures and share value. *Journal of Financial Economics*, 26(2), 255–276.
- Chang, X., Fu, K., Low, A., & Zhang, W. (2015). Non-executive employee stock options and corporate innovation. *Journal of Financial Economics*, 115(1), 168–188.