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THE EFFECTS OF THE COVID-19 PANDEMIC ON THE RETURN ON EQUITY OF FOREIGN TRADE CAPITAL COMPANIES [1]

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Abstract

The COVID-19 pandemic has shown its negative effects in all areas from health to economy, education to transportation, agriculture to tourism. While previous global crises were generally caused by financial-based problems, the COVID-19 pandemic is a health-based crisis and makes its negative economic effects felt more severe than financial crises. Especially, developing countries develop policies to increase their export revenues to overcome economic crises. In this way, direct contribution is made to macroeconomic indicators such as production increase, easing exchange rate pressure, increase in employment and growth rates. In this sense, Foreign Trade Capital Companies in Türkiye have great importance both in terms of their share in total industry and total exports. In the literature review, it has been observed that there are not many studies on these special-status companies, which are of great importance to the Turkish economy. In this study, unlike other studies, the effects of the COVID-19 pandemic on the financial performance of Foreign Trade Capital Companies were analysed in terms of return on equity. The data for the period between 2009Q1-2022Q2 were analysed by the panel data analysis method. As a result of the analysis, a significant and positive relationship was found between the COVID-19 pandemic and return on equity.

Keywords: *Foreign Trade Capital Companies, Return on Equity, Covid-19 Pandemic, Financial Performance.*

Jel Classification: *M00, M10, M40*

COVİD-19 PANDEMİSİNİN DIŞ TİCARET SERMAYE ŞİRKETLERİNİN ÖZKAYNAK KARLILIĞINA ETKİSİ

Öz

Covid-19 pandemisi sağlıktan ekonomiye, eğitimden ulaşıma, tarımdan turizme kadar tüm alanlarda olumsuz etkilerini göstermiştir. Daha önceleri yaşanmış olan küresel krizler genellikle finans temelli sorunlardan kaynaklanırken, Covid-19 pandemisinin sağlık temelli bir kriz olmasına rağmen, ekonomik açıdan yarattığı olumsuz etkileri finansal krizlerden daha ağır şekilde hissettirmektedir. Özellikle gelişmekte olan ülkeler yaşanan ekonomik krizleri en hafif şekilde atlatılabilmesi için başlıca ihracat gelirlerini artıracak politikalar geliştirmektedirler. Bu şekilde üretim artışının sağlanması, kur baskısının hafifletilmesi, istihdamda artış, büyüme oranları gibi makroekonomik göstergelere doğrudan katkı sağlanmaktadır. Bu anlamda Türkiye'de Dış Ticaret Sermaye Şirketleri hem toplam sanayi içerisindeki payı hem de toplam ihracat açısından büyük bir öneme sahiptir. Yapılan literatür taramalarında ülkemiz ekonomisi için büyük öneme sahip olan bu özel statülü şirketleri konu alan fazla çalışma yapılmadığı gözlemlenmiştir. Çalışmada diğer araştırmalardan farklı olarak Covid-19 pandemisinin Dış Ticaret Sermaye Şirketlerinin finansal performansına etkileri öz kaynak karlılığı açısından incelenmiştir. 2009Q1-2022Q2 arası dönemine ait veriler panel veri analizi yöntemiyle incelenmiştir. Analiz sonucunda Covid-19 pandemisi ile öz sermaye karlılığı arasında anlamlı ve pozitif ilişkili bulunmuştur.

Anahtar Kelimeler: *Dış Ticaret Sermaye Şirketleri, Özkaynak Karlılığı, Covid-19 Pandemisi, Finansal Performans*

Jel Sınıflandırması: *M00, M10, M40*

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1. Introduction

Adam Smith, who is accepted as the founder of modern economics, mentioned for the first time in his work published in 1776 that countries would find more consumption opportunities by trading with each other, and foreign trade transactions have become one of the main economic indicators of countries over time. Especially for countries, exports enable an increase in national income, while encouraging an increase in production, supporting industrialisation, and increasing employment.

Foreign trade activities are of vital importance, especially for countries with a deficit in the foreign trade balance of the balance of payments, i.e., countries whose total imports of goods and services exceed the total exports. The excess of imports over exports leads to an increase in the demand for the currency in which imports are made in the country, and thus the domestic currency is exposed to exchange rate pressure against foreign currencies. This situation also adversely affects the costs and unit prices of goods and services produced. These negative chain effects can be considered as one of the reasons for the increase in inflation, that is the general price balance. In this respect, the efficiency of foreign trade capital companies is very important for the national economy (Akkaynak, 2023).

Many different economic development policies were implemented in Türkiye and an export-oriented growth strategy was adopted in 1980. Within the scope of this strategy, economic liberalisation policies were adopted, many incentives and supports were provided especially to exporting enterprises. Foreign Trade Capital Company status offers several advantages to enterprises that are entitled to receive this title. The main ones can be listed as tax applications, customs legislation, export transactions, Eximbank loans and the opportunity to benefit advantageously from various government supports.

Since the COVID-19 pandemic has been rapidly transmitted through coughs, sneezes, saliva grains and contact, restrictive measures were taken to stop human mobility to prevent the spread of the disease. Rapid transmission and the restrictions imposed primarily caused a panic environment in people. People started to act with a tendency to stock up on basic foodstuffs and hygiene materials, and the change in consumption behaviour caused the supply and demand balance to deteriorate. In addition, the closure of enterprises caused companies to lay off personnel, resulting in a decrease in production and historical declines in the stocks of listed enterprises. In the first period of the pandemic, many countries, especially European countries, closed their customs, causing breaks in the supply chain (Yiğit and Canöz, 2020).

Various economic policies were developed to compensate for the effects of economic depressions experienced by countries as soon as possible by easing prohibitions and restrictions. In this process, foreign trade, especially increasing export inputs, became one of the most important factors in the economic development of countries.

In particular, the fact that the starting point of the disease was China led the countries, which largely source their imports from China, to search for alternative supply centres. At this point, Türkiye came to the forefront as an attractive alternative supply centre in terms of its location, product diversity and production capacity. In 2020, despite the announcement of the pandemic in the first quarter of 2020 and the tightest lockdowns in the second quarter, Türkiye achieved the highest export volume in its history by reaching the 2019 figure of $170 billion in total exports in 2020, $225 billion in 2021 and $254 billion in 2022 (Pelit and Irmak, 2022).

Unlike other studies in the literature, this study analysed the effect of the COVID-19 pandemic on the return on equity of Foreign Trade Capital Companies. In the selection of the study subject, Foreign Trade Capital Companies, which have a large share in the total exports of our country, and the return on equity, which is vital for the sustainable growth of enterprises, were analysed. For countries in times of crisis, exports are of great importance in terms of economic growth, employment increase

and sustainable development. While exports create new business opportunities and enable the development of products and services in international markets, they are effective in ensuring financial stability by increasing foreign exchange reserves (Vidya et al., 2020; Canöz, 2022).

For investors, the main expectation when establishing an enterprise is profitability. Return on equity is critical for long-term success and sustainable growth. Therefore, in this study, the effect of the COVID-19 pandemic on the financial performance of Foreign Trade Capital Companies was analysed in terms of the return on equity. In the following part of the study, methodology used, and findings obtained will be presented. In the conclusion part, the findings will be discussed and interpreted.

2. Literature Review

When the studies on the related topic are examined, Özata, Canlı and Özdemir (2021), Karamahmutoğlu, M. K. (2022), Alnıpak and Kale (2021), Akca et al. (2020), Özcan (2021) examined the transport and aviation sectors and concluded that the COVID-19 pandemic negatively affected this sector. In their studies, researchers such as Bahar and İlal (2020), Kılıç (2020), Korkut et al. (2020), Güngör and Çemberlitaş (2022) concluded that the COVID-19 pandemic negatively affected the financial structure of tourism enterprises. Zhang et al. (2021), Sinianskaia et al. (2020), Gruszczynski (2020), Vidya and Prabheesh (2020), Hayakawa and Mukunoki (2021) examined the relationship between the COVID-19 pandemic and international trade and concluded that the COVID-19 pandemic negatively affected international trade.

Gökçen (2021), Bayraktar (2020), Dağdelen (2023), Yücel and Durak (2021) examined the effects of the COVID-19 pandemic on the manufacturing sector in their studies; Gökçen (2021) concluded that it had a negative impact, Bayraktar (2020) concluded that stock returns in the post-pandemic period were higher than the pre-pandemic period in the 260-day period. Also, Dağdelen (2023) found that there is a causality relationship between case numbers and manufacturing industry exports. Yücel and Durak (2021) concluded that "Metal Industry" and "Textile, Clothing and Leather Sectors" were negatively affected by the pandemic, while sectors such as pharmaceuticals, disinfectants, basic food, and packaging were positively affected. Ertaş and Yetim (2022), Doruk (2022), Kılınç and Çalış (2021) analysed the food and beverage sectors and concluded that the COVID-19 pandemic positively affected these sectors in financial terms. In addition, Akıncı et al. (2020) examined stock market prices and concluded that stock market prices decreased as the number of cases increased and stock market prices increased as the number of cases decreased.

Bayrakdaroğlu (2010), Duman (2010), Doğru (2011), Çakır, Küçükkaplan (2012), Kısakürek and Aydın (2013), Korkmaz, Karaca (2014), Alfarra (2016), Doğan and Topal (2016), Caba (2017) Şamiloğlu, Öztop and Kahraman (2017), Tezcan (2017), Ece and Güner (2018), Erdoğan (2018), Aydın (2019), Taysı (2019), Dozen and Başkan (2020), Şahin (2020), Şen (2020), Aya (2021), Kaya (2021), Alantar (2022), Atar (2022) used return on equity ratios as dependent variables in their studies using panel data analysis method.

Bayrakdaroğlu (2010) concluded that free float ratios have an impact on the financial performance of firms, while Duman (2010) found that a reliable information flow ensures that investors focus on long-term investment instead of short-term gains. Doğru (2011) concluded that the efficiency on personnel expenditures and non-interest expenses in the bank has a direct impact on profitability. Çakır, Küçükkaplan (2012) analysed the relationships between return on equity and other variables used in their study in which they examined the financial data of 122 firms by using panel data analysis method.

Kısakürek and Aydın (2013) found that financing of assets with equity increases the profitability of sales and profitability of assets of the enterprise and decreases the profitability of equity. Korkmaz, Karaca (2014) examined and interpreted the financial performance of the firms in the manufacturing industry index and the relationships between the equity dependent variable and the selected

independent variables. Alfarra (2016) concluded that the ratio of financial debt to equity has a negative effect on company performance and found that the 2008 crisis had a negative impact on company performance in terms of return on equity. Doğan and Topal (2016), in their study aiming to determine the financial factors determining the profitability of 136 companies traded in Borsa Istanbul (BIST) and included in the manufacturing industry index, found a positive relationship between Return on Equity and total assets.

Caba (2017) analysed the financial data of industrial firms operating in BIST. In this study, he used return on equity as a dependent variable and concluded that financial leverage and company size are effective on the financial performance of companies. Şamiloğlu, Öztop and Kahraman (2017) examined the relationship between the return on equity dependent variable and the independent variable used in their study, which analysed the financial data of 51 firms operating in BIST for the years 2006-2015. Ece and Güner (2018) found a positive relationship between corporate governance implementation success and firm market performance and firm financial performance. Erdoğan (2018) analysed the financial performance of tourism companies and made suggestions for sustainable profit management. Aydın (2019) examined the return on equity dependent variable and selected independent variables using the financial data of 61 companies in the BIST 100 index for the years 2010-2017. Accordingly, it was determined that the company management should focus on firm-specific internal factors in order to maintain or increase the profitability level.

Taysı (2019) found that intangible assets have a positive and significant effect on the return on equity during the crisis period. Dozen and Başkan (2020) analysed the financial data of 42 companies included in the BIST sustainability index in their study in which the effects of company performance on dividend distribution were examined by logistic regression analysis method. In their study, in which return on equity is included in the dependent variables, it was concluded that increasing the capital ratio and the ability to quickly convert stocks into cash affect the decision of firms to distribute dividends. Şahin (2020) investigated the financial data of 110 companies in the Borsa Istanbul Industrial Index for the period between 2005 and 2014 using the panel data analysis method and found that recoverable slack has a positive effect on firm performance, while potential slack has no positive effect. Şen (2020) aimed to examine the relationship between profitability, efficiency, and market capitalisation by using panel data analysis method and used return on equity as dependent variables and concluded that intellectual capital does not affect return on equity.

Aya (2021) used the return on equity variable in his study and as a result of the study, it was determined that intellectual capital has a significant effect on business performance. Kaya (2021) used return on equity as a dependent variable in his study and the financial data of 155 companies operating in Borsa Istanbul for the period between 2009 and 2019 were analysed by Dynamic Panel data analysis method. As a result of the study, it was determined that general administrative expenses and research and development expenses positively affect the financial performance of companies. Alantar (2022) concluded that intellectual capital and its components influence the profitability dimension of firm performance. Atar (2022) determined that intellectual capital has a positive effect on the firm.

When the literature was examined, although studies were carried out in many fields and sectors, it was noticed that there was a lack of literature on foreign trade capital companies, which are of vital importance in line with our country's macroeconomic goals, and this study was conducted. In addition, the fact that the research period of the study is current and includes 54 periods and that the analysis is carried out with richer variables compared to other studies in the literature reveal the unique aspects of the study.

3. Method

The data set of this study, which examines the relationship between the COVID-19 pandemic and the return on equity of companies in the sample of foreign trade capital companies, consists of a total of 810 observations, N: 15 and T: 54. The data set is obtained from the Finnet database. The time series in the data set consists of quarterly cross-sections and covers the period between 2009Q1 and 2022Q2.

There are 1 dependent and 13 independent variables in the study. Net profit/equity ratio is used as the dependent variable. Independent variables are as follows: Current Assets/Short Term Debts, Liquid Assets + Securities/Short-Term Debt, Net Working Capital/Total Assets, Total Debts/Equity, Equity/Total Assets, Total Debts/Total Assets, Net Sales/Total Assets, Cost of Goods Sold/Inventories, Net Sales/Trade Receivables, Current Assets/Fixed Assets, Fixed Assets/Total Assets, Fixed Assets/Permanent Capital, and Market Value/Book Value.

3.1. Dependent Variable

3.1.1. Return on Equity (ROE)

Return on equity is one of the most important profitability indicators for shareholders and investors who invest in enterprises. Return on equity shows how much return shareholders and investors get at the end of the period in return for each unit of shares, i.e. capital. In short, it can also be defined as the measurement of the profit to be obtained from the investment. The higher the result obtained as a result of dividing net profit by equity capital shows that the capital that investors put into the enterprise is well utilised as a result of the activities during the period (Özen, 2019). Considering the financial performance of enterprises, the correct use of financial leverage helps to increase the return on equity (Peker & Baki, 2011).

$$\text{Return on Equity (ROE)} = \frac{\text{Net Profit}}{\text{Equity Capital}}$$

3.2. Independent Variables

3.2.1. Current Ratio

Current ratio is one of the main liquidity ratios showing the ability of enterprises to pay their short-term debts. This ratio is calculated by dividing current assets by short-term liabilities. Since it shows different meanings according to different sectors, it is necessary to evaluate the current ratio by considering the sector and market conditions in which the enterprise operates (Aydın et al., 2010). As a general opinion, a current ratio above 1.5 indicates that the current assets of the enterprise can cover short-term debts.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Short} - \text{term Debts}}$$

3.2.2.Cash Ratio

This financial ratio shows how much of the short-term debts can be met with the cash and marketable securities of the enterprises in cases where the enterprises experience problems in cash flow. In general approach, a ratio above 1 is desired by the enterprises.

$$\text{Cash Ratio} = \frac{\text{Cash} + \text{Marketable Securities}}{\text{Short} - \text{term Debts}}$$

3.2.3. Net working capital / total assets

This ratio is used to determine whether the amount remaining after paying off all short-term debts of businesses at once will be sufficient for working capital. When interpreting net working capital / total

assets, interpreting it together with other financial ratios will help to obtain clearer results (Aşıkoğlu et al., 2011).

$$\frac{\text{Current Assets} - \text{Short} - \text{Term Debts}}{\text{Total Assests}}$$

3.2.4. Total debts / Equity ratio

The ratio of debt to equity is calculated by dividing the sum of the short-term foreign resources and long-term foreign resources of the enterprises by the equity. In other words, this ratio reflects the percentage of financing coming to the company from creditors and investors. In this way, it reveals the adequacy of the company's equity to meet the company's debts (Arat and Çetin 2011). If this ratio is higher than 1, it indicates that the funds provided by third parties are more than the funds provided by the company's partners, while ratios below 1 indicate that most of the assets of the company are financed by equity capital. An increase in this ratio is considered a negative situation in terms of the security of receivables. (Çabuk and Lazol 2016).

$$\frac{\text{Short} - \text{Term Debts} + \text{Long} - \text{Term Debts}}{\text{Equity}}$$

3.2.5. Equity / total assets

The ratio of equity to total assets is a financial ratio that reflects how much of the enterprise resources are provided by the shareholders of the enterprise. This ratio is also called equity capital ratio and shows the financial strength of the enterprises for the lenders who provide long-term loans. It is desirable that this ratio is high in enterprises (Özçelik, 2018).

$$\frac{\text{Equity}}{\text{Total Assets}}$$

3.2.6. Leverage ratio

This ratio is used to show how much of the assets owned by the enterprise is financed by foreign resources (Bilici, 2019). The leverage ratio, known as the ratio of total debts to assets, is also called the total debt ratio. The leverage ratio shows how much of the assets owned by the enterprises are financed by foreign resources. While the increase in the total debts of enterprises indicates that profitability increases up to a certain level, the increase in debts and financing-related costs after a certain point reduces profitability (Çaldağ, 2007). Creditors desire enterprises to have a low debt ratio.

$$\text{Leverage Ratio} = \frac{\text{Short and Long Term Debts}}{\text{Total Assets}}$$

3.2.7. Active turnover rate

The ratio of net sales to total assets is an important financial ratio that shows how effectively the assets of businesses are used. We can say that a high number of fixed assets within the assets of businesses slows down the asset value rate, while a high asset value speed increases the asset value speed. Asset value velocity ratio may also vary depending on the sector the business is in, its risk situation and profit margin (Ceylan and Korkmaz, 2017).

$$\text{Active Turnover Rate} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

3.2.8. Inventory turnover rate

Inventories are included in the main activity of both production and trade enterprises. The increase in the profitability levels of enterprises depends on the use and sale of the stocks purchased by the enterprises for production (Karapınar & Ayıkoğlu, 2018). The sooner enterprises can sell the products they purchase or the products they produce, the less they will need the working capital they need. Any product that takes longer to sell will remain in stock and cause an increase in inventory costs (Sönmez, 2022).

$$\text{Inventory turnover rate} = \frac{\text{Cost of Goods Sold}}{\text{Stocks}}$$

3.2.9. Receivable turnover rate

The most important source of money inflows of enterprises is their receivables. For this reason, the liquidity of enterprises and their ability to collect their receivables are very important in the financial analyses of enterprises. For this reason, receivables turnover rate is an important ratio that shows the ability to collect receivables and liquidity of enterprises (Akgüç, 1998). The higher the turnover rate of commercial receivables obtained as a result of the receivables turnover rate, it shows that the collection ability of the enterprises is higher (Gorczyńska, 2011).

$$\text{Receivable turnover rate} = \frac{\text{Net Sales}}{\text{Commercial Receivables}}$$

3.2.10. Ratio of current assets to fixed assets

The ratio of current assets to fixed assets gives information about the asset structure of enterprises. In terms of accounting standards, the assets of the enterprises are divided into two separate sections as current assets and fixed assets in terms of associating them with certain periods on the balance sheet. Current assets include cash and cash equivalents as of the balance sheet date and assets that are expected to be converted into cash within one financial calendar year or assets that are cash and are expected to be used and consumed within one financial calendar year. Receivables with a maturity of more than one financial year and assets that are expected to be used or consumed in business activities in more than one year are included in fixed assets. In enterprises whose field of activity is production, while the physical limits of production capacity are determined by fixed assets, there must also be a certain amount of cash assets to meet the need for raw materials, materials, and semi-finished products required for production. For this reason, in order to ensure the continuity of the activities of the enterprises, they must have current assets as well as fixed assets. Businesses should decide on the ratios of current and fixed assets in their total assets according to the conditions of the sectors in which they operate (Alfarra, 2016).

$$\frac{\text{Current Assests}}{\text{Fixed Assests}}$$

3.2.11. Fixed assets / total assets ratio

This is a financial ratio used to measure and evaluate the financial soundness of enterprises. Fixed assets consist of items such as buildings, machinery and equipment that are held by enterprises on a long-term basis. On the other hand, all of the assets owned by the enterprise are included in total assets. It also sheds light on how the enterprise finances long-term assets and how equity and foreign resources are managed accordingly.

$$\frac{\text{Fixed Assests}}{\text{Total Assets}}$$

3.2.12. Fixed assets / permanent capital ratio

This ratio is calculated by dividing the fixed assets in the balance sheets of the enterprises by the permanent capital. Long-term debts and equity are added together when calculating permanent capital. The ratio of fixed assets to permanent capital shows how much of the financing of fixed assets in the balance sheet is covered by long-term debt and equity (Özolgun, 2016).

$$\frac{\text{Fixed Assests}}{\text{Long} - \text{term debts} + \text{Equity}}$$

3.2.13. Market value / book value ratio

This ratio is calculated by dividing the market value of the stock by the shareholders' equity. Thus, it is determined how many times the market value of the stock is the equity. It is understood that as the value obtained as a result of dividing the market value by the book value increases, the value of the stock increases, and as it decreases, the value of the stock decreases. One of the most important advantages of this ratio is that it can be calculated even if the earnings or profit before interest and tax are negative (Geddes, 2006).

$$\frac{\text{Market Value}}{\text{Book Value}}$$

4. Findings

Panel data analysis method was used in the study. With panel data analysis, the effect of the COVID-19 pandemic on the return on equity and other variables affecting financial performance were analysed on the models established collectively.

4.1. Panel Data Analysis

Using panel data in econometric analyses provides many more advantages than using only time series data set or cross-sectional data set. In panel data analyses, as a result of combining horizontal cross-section data with time series data, there is no problem such as the lack of number of observations, which can be frequently encountered in analyses. With the sufficient number of observations, the researcher has the opportunity to work with more data. This increases the degree of freedom in analyses and ultimately increases the predictive power of the analysis. This situation allows the economic problems that cannot be solved by time series analyses and horizontal cross-section analyses to be solved by panel data analysis (Baltagi 2005; Hsiao, 2003).

4.2. Panel Data Regression Models

Panel data regression models consist of dependent variable, independent variables, constant coefficient of variation, slope coefficients and error term. The estimation method to be used in the analysis of a panel data regression model is decided by considering whether the coefficients in the model vary by unit, time or both unit and time. The reflection of unit-specific characteristics of the variables in the model is expressed as unit effect. The fact that the variables reflect time-specific characteristics is referred to as time effect (Pazarlıoğlu and Gürler, 2007).

There are three different methods that can be used in the estimation of regression in panel data regression models. These methods are as follows.

1. Classic model

2. Fixed effects model

3. Random effects model

4.3. Determination of the Model to be Used in the Study

Panel data analysis starts with the homogeneity test of the variables used in the analysis. This test provides information about which unit root test can be used and which test cannot be used when testing the stationarity of the variables in the model. The next step after the homogeneity test is to test the model for horizontal cross-section dependence. Like the homogeneity test, horizontal cross-section dependence tests also provide information about which unit root test can be used and which test cannot be used when testing the stationarity of the variables in the model. If the model is horizontal cross-section independent, first generation unit root tests should be used, and if the model is horizontal cross-section dependent, second generation unit root tests should be used. After homogeneity and cross-section dependence tests, it is determined which unit root tests are appropriate for the variables in the model. At this stage, the stationarity of the dependent, independent and control variables in the model is tested with the desired unit root test or tests among the appropriate unit root tests. If the results are stationary at the level value, the analysis is continued with the pooled least squares method. Otherwise, it would be a better choice to prefer co-integration tests. If the unit root tests of the variables in the model are stationary at level, F and LM tests should be performed. The F test tests whether the model fits the fixed effects model or the classical model. The LM test tests whether the model is suitable for the random effects model or the classical model. If no fixed and random effects are found after F and LM tests, the model should be estimated with the classical model. If fixed and/or random effects are found as a result of testing the model with F and LM tests, Hausman test should be performed in order to decide which one to use. In the presence of fixed effects and random effects, the random effect is tested by Hausman test. After determining the model to be used in the analysis, the panel data should be tested for autocorrelation and heteroscedasticity.

4.3.1. Homogeneity Test

Among the parameters in panel regression models, the models in which n is constant for the unit dimension and t is constant for the time dimension are called homogeneous. In heterogeneous models, there are different parameters for unit and time dimension. Homogeneity tests are divided into three groups. The first group of tests is based on the Chow test, which is used to detect structural breaks. The second group of tests are Hausman-type tests based on the difference between estimators. The third group of tests is based on the distribution of slope parameters for each unit from an appropriate pooled estimator (Gündüz, 2014).

4.3.2. Cross Section Dependency Test

Cross-sectional dependence means that errors have simultaneous correlation across cross-sectional units. In panel data analyses, a cross-sectional dependency test must be performed before performing the unit root test, which tests the stationarity of variables. If the existence of a cross section is accepted, 2^{nd} generation unit root tests are appropriate; if it is rejected, 1^{st} generation unit root tests are appropriate. The independence of cross-sections in panel data analysis is based on the assumption that other cross-sectional units in the panel are affected at the same level by a shock or external impact on any of the units forming the panel. (Alper and Oransay, 2015).

4.3.3. Panel Unit Root Test

Unit root tests are conducted to test the stationarity of the data set. Stationarity means that the mean, variance and autocovariance of a series are constant over time. Stationary series converge to a value or fluctuate around a value in the long run. A regression with stationary series can give reliable results. (Tatoğlu, 2017; İnci, 2014).

4.3.4. F, LM and Hausman Tests

After testing the stationarity of the variables in the model, it should be determined whether the model is suitable for the classical model, fixed effects model or random effects model. F test, LM test and Hausman Test are used in determining the appropriate model.

Whether the panel data analysis is suitable for the fixed effects model, or the classical model is determined by the F test. Likewise, whether the panel data analysis is suitable for the random effects model, or the classical model is determined by the LM test. Further, it is decided by the Hausman test whether the panel data analysis is suitable for the fixed effects model or the random effects model.

4.3.5. Autocorrelation and Heteroscedasticity Tests

Autocorrelation means the existence of a relationship between error terms in regression. One of the most important assumptions of the least squares method is that consecutive error term values are independent of each other. That is, there is no autocorrelation. The presence of autocorrelation in a panel data analysis model results in the conclusion that least squares method estimators may not be effective even though they produce consistent, unbiased results. If the autocorrelation is positive, the deviation will be negative. (Yavuz, 2009; Polat, 2016).

4.3.6. Robust Estimators

The final stage of panel data analysis is the selection of a robust estimator suitable for the model. Robust estimators enable effective estimation if one or more of the heteroscedasticity, autocorrelation and cross-sectional dependency situations are present in the model. If the model contains one or more of the following heteroskedasticity, autocorrelation or cross-sectional dependency situations, this problem can be solved with two options. The first of these is to correct standard errors without touching the parameter estimates. The other one is to make appropriate estimations in case one or more of the following are autocorrelation, heteroscedasticity, or cross-sectional dependence (Tatoğlu, 2013).

Table 1 summarizes the frequently used robust estimators and the situations in which they can be used.

Table 1: Robust Estimators

	Heteroscedasticity	Autocorrelation	Cross Section Dependency
Huber, Eicker and White Estimator	+	-	-
Arellano, Froot and Rogers Estimator	+	+	-
Wooldridge Estimator	+	+	-
Newey-West Estimator	+	+	-
Parks-Kmenta Estimator	+	-	+
Beck-Katz Estimator	+	-	+
Driscoll ve Kraay Estimator	+	+	+

Source: Tatoğlu, (2013).

The model established within the assumptions of the panel data analysis method is as follows.

$$\left(\frac{Nk}{Ök}\right)_{it} = \alpha + \beta_1(P)_{i,t} + \beta_2\left(\frac{Dv}{Kvb}\right)_{i,t} + \beta_3\left(\frac{Hd+Mk}{Kvb}\right)_{i,t} + \beta_4\left(\frac{Nis}{Ta}\right)_{i,t} + \beta_5\left(\frac{Tb}{Ök}\right)_{i,t} + \beta_6\left(\frac{Ök}{Ta}\right)_{i,t} + \beta_7\left(\frac{Tb}{Ta}\right)_{i,t} + \beta_8\left(\frac{Ns}{Ta}\right)_{i,t} + \beta_9\left(\frac{Smm}{S}\right)_{i,t} + \beta_{10}\left(\frac{Ns}{Tal}\right)_{i,t} + \beta_{11}\left(\frac{Dv}{Duv}\right)_{i,t} + \beta_{12}\left(\frac{Duv}{Ta}\right)_{i,t} + \beta_{13}\left(\frac{Duv}{Ss}\right)_{i,t} + \beta_{14}\left(\frac{Pd}{Dd}\right)_{i,t} + u_{i,t}$$

Table 2:Descriptive Statistics of Variables

	Average	Median	Std. Deviation	Minimum	Maximum	Number of Observations
Nk/Ök	7,7260	9,3898	81,0621	-1908,52	292,004	810
Dv/Kvb	1,8402	1,2733	2,6387	0,0000	17,6356	810
(Hd+Mk)/Kvb	62,8270	28,6840	145,8013	0,0000	1200,11	810
Nis/Ta	15,4956	13,1574	19,6867	-49,0791	80,8222	810
Tb/Ök	601,8297	165,971	3491,670	-2569,11	90904,51	810
Ök/Ta	39,6050	36,6893	21,3491	-8,9395	95,8022	810
Tb/Ta	58,8162	62,1925	22,0256	0,0000	108,5601	810
Ns/Ta	1,2220	1,0665	0,7560	0,0000	3,7819	810
Smm/S	443,7717	313,9529	418,1080	0,0000	2203,95	810
Ns/Tal	765,4963	370,6487	6433,28	0,0000	181441,1	810
Dv/Duv	4109,83	127,3390	20293,58	0,0000	235731,8	810
Duv/Ta	41,6830	43,4151	18,5145	0,0000	79,5308	810
Duv/Ss	73,4541	71,6585	38,6780	0,0000	422,6856	810
Pd/Dd	2,9458	1,8306	4,2618	0,0000	53,4511	810

When the descriptive statistics of the variables are analysed, it is observed that the number of observations of the variables is 810 and the total debt/equity variable has the highest standard deviation. The lowest standard deviation belongs to the net sales/total assets variable.

In the analysis, the variables considered in the model will first be subjected to homogeneity and horizontal cross-section dependence tests, and then the appropriate unit root test will be performed according to the results obtained. Afterwards, the appropriate estimator will be selected with F, LM, Hausman test. Then, Heteroskedasticity, Autocorrelation and model horizontal cross-section dependence tests will be performed, and regression analysis will also be performed through the appropriate estimator. Table 3 shows the homogeneity and horizontal cross-section dependence test results of the variables for the period between 2009Q1 and 2022Q4 (Akkaynak, 2022)

Table 3: Homogeneity and Horizontal Cross-Section Dependence Tests of Variables

Variable	**Code**	**Swamy S**	**CDlm**
Net profit/Equity	Nk/Ök	.129745**	25.22*
Current Assets/Short-Term Debts	Dv/Kvb	.0180776 *	1.96***
Liquid Assets + Securities/Short-Term Debt	(Hd+Mk)/Kvb	.5918039***	1.63
Net Working Capital/Total Assets	Nis/Ta	.1551328*	3.37*
Total Debts/Equity	Tb/Ök	3.956241	13.15*
Equity/ Total Assets	Ök/Ta.	.3960452*	16.5*
Total Debts/Total Assets	Tb/Ta	.5869282*	21.37*
Net Sales/Total Assets	Ns/Ta	.0123104*	13.6*
Cost of Goods Sold/Inventories	Smm/S	.076372 *	53.52*
Net Sales/Trade Receivables	Ns/Tal	.0865169*	39.51*
Current Assets/Fixed Assets	Dv/Duv	34.03802	14.7*
Fixed Assets/Total Assets	Duv/Ta	.4167131*	15.07*
Fixed Assets/Permanent Capital	Duv/Ss	.7308694*	5.06*
Market Value/Book Value	Pd/Dd	2.819772*	16.96*

Note: Significance at 1%, 5% and 10% significance levels are denoted by *, ** and ***, respectively

When Table 1 is analysed, it is determined that all variables except Tb/Ök and Dv/Duv variables are heterogeneous, while Tb/Ök and Dv/Duv variables are homogeneous. When the CDlm horizontal cross-section dependence test results are analysed, it is found that all variables except the (Hd+Mk)/Kvb variable are horizontal cross-section dependent. These results suggest that it is appropriate to test all variables with second-generation unit root tests.

In this paper, the second-generation version of the Harris Tvazalis (HT) unit root test is applied to the variables. Table 4 presents the unit root test results.

Table 4: Unit Root Tests of Variables

Variable	**Code**	**Haris Tzavalis**
Net profit/Equity	Nk/Ök	0.0852*
Current Assets/Short-Term Debts	Dv/Kvb	0.6985*
Liquid Assets + Securities/Short-Term Debt	(Hd+Mk)/Kvb	0.7213*
Net Working Capital/Total Assets	Nis/Ta	. 0.8359*
Total Debts/Equity	Tb/Ök	-0.0988*
Equity/ Total Assets	Ök/Ta.	0.9011*
Total Debts/Total Assets	Tb/Ta	0.7172*
Net Sales/Total Assets	Ns/Ta	0.8710*
Cost of Goods Sold/Inventories	Smm/S	0.1574*
Net Sales/Trade Receivables	Ns/Tal	-0.0155*
Current Assets/Fixed Assets	Dv/Duv	0.5166*
Fixed Assets/Total Assets	Duv/Ta	0.8423*
Fixed Assets/Permanent Capital	Duv/Ss	0.8118*
Market Value/Book Value	Pd/Dd	0.5143*

Note: Significance at 1%, 5% and 10% significance levels are denoted by *, ** and ***, respectively.

When Table 2 is analysed, Haris Tzavalis unit root test results of all variables are found to be stationary at 1% significance level. The tests to be performed after the unit root test are the tests for determining the appropriate estimator. At this stage, F, LM and Hausman tests should be applied to the models in order to select the appropriate estimator. Table 5 shows the test results.

Table 5: F, LM and Hausman Tests of the Model

Model	F		LM		Hausman	Decision
	Statistics	P-Val	Statistics	P-Val		
Net profit/ Equity	7,23*	0,000	0,000	1.000	0,0062	Fixed Effects

Note: Significance at 1%, 5% and 10% significance levels are denoted by *, ** and ***, respectively.

When Table 3 is analysed, the F test of the whole model is found significant at 1% significance level. The F test enables the econometric model to choose the appropriate one between fixed effects and classical models. Accordingly, the fact that the F test statistics are significant at 1% significance level means that the fixed effects estimator is more appropriate compared to the classical model. The result of the LM test in Table 3 is statistically insignificant and the alternative hypothesis is rejected. The LM test enables the econometric model to choose the appropriate one between the random effects

and the classical model. According to the results of the LM test, the model is suitable for analysis with the classical model. According to the Hausman test results in Table 3, it is concluded that the model is suitable for analysis with fixed effects. After choosing the appropriate estimator, the models should be tested for the presence of variance, autocorrelation, and horizontal cross-sectional dependence. The test results are as shown in Table 6.

Table 6: Variance, Autocorrelation and Horizontal Cross-Section Dependence Tests of Variables

Model	Changing Variance	Autocorrelation		Horizontal Cross-Section Dependence	Suitable Resilient Estimator
	Wald	Durbin W	Baltagi WL	Pesaran	
Net profit/ Equity	81634.33*	1.601542	1.6124146	14.337,*	Driscol Kraay

Note: Significance at 1%, 5% and 10% significance levels are denoted by *, ** and ***, respectively.

When Table 4 is analysed, the Wald statistic values, which test for the presence of variance, are found to be statistically significant at 1% significance level in the model. When the results of the Durbin W. and Baltagi WL test statistics, which test for the presence of autocorrelation, are analysed, the presence of autocorrelation in the model is accepted since the values are below the critical value 2. The Pesaran test statistic, which tests for horizontal cross-section dependence in the model, is found to be significant at 1% significance level and the existence of horizontal cross-section dependence in the model is accepted. At this stage, either these effects should be removed from the data set or a resilient estimator that can estimate the presence of these effects should be preferred. In this study, the Driscol Kraay estimator, which can perform resilient estimating under the presence of all three effects, is preferred. The test results are as in Table 7.

Table 7: Panel Regression Analysis Results

Variable	**Code**	**Regression**
Net profit/Equity	Nk/Ök	
Current Assets/Short-Term Debts	Dv/Kvb	-29.75984**
Liquid Assets + Securities/Short-Term Debt	(Hd+Mk)/Kvb	.2122514***
Net Working Capital/Total Assets	Nis/Ta	2.538079**
Total Debts/Equity	Tb/Ök	-.002187
Equity/ Total Assets	Ök/Ta.	.4976686
Total Debts/Total Assets	Tb/Ta	.3677946
Net Sales/Total Assets	Ns/Ta	37.24884**
Cost of Goods Sold/Inventories	Smm/S	-.0032298

Net Sales/Trade Receivables	Ns/Tal	-.0000421
Current Assets/Fixed Assets	Dv/Duv	.0002627
Fixed Assets/Total Assets	Duv/Ta	1.038172
Fixed Assets/Permanent Capital	Duv/Ss	.512634
Market Value/Book Value	Pd/Dd	-11.56089**

Note: Significance at 1%, 5% and 10% significance levels are denoted by *, ** and ***, respectively.

r2 value= 0,2472
F Statistics= 4.89

The COVID-19 pandemic variable, which is our study subject variable in the model, was found to be statistically positively correlated and statistically significant with the Net Profit/Equity variable. Among the other variables in the model, Nis/Ta and Ns/Ta variables are found to be significant at 5% significance level and Hd+Mk/Kvb variable is found to be significant at 10% significance level and positively related to the dependent variable. Dv/Kvb and Pd/Dd variables in the model are found to be statistically significant at 5% significance level and negatively related to the dependent variable.

Statistical results of the variables Tb/Ök, Ök/Ta, Tb/Ta, Smm/S, Ns/Tal, Dv/Duv, Duv, Ta and Duv/Ss in the model were found to be insignificant.

The value of the F statistic, which analyses the significance of the model collectively, is found to be significant at 1% significance level.

In the literature review, it is observed that in 24 studies conducted on different sectors and using return on equity as a dependent variable between 2010 and 2023, similar results as well as results with different opposite effects have been reached. The variables with statistically significant results in the study in which we examined the effects of foreign trade capital companies on return on equity are Nis/Ta, Ns/Ta, Hd+Mk/Kvb Dv/Kvb Dv/Kvb Pd/Dd. Considering these variables, it is seen that the current ratio gives significant results in nine of the studies examined, the cash ratio in three, the asset turnover rate in nine, the receivables turnover rate in four and the ratio of market value to book value in eight. For example, while the significant and negative effect of the current ratio in our study coincides with the studies of Korkmaz and Karaca (2014), Aydın (2019), Alfarra (2016), Akpınar (2016), it is observed that it has a positive effect in the study of Erkan (2023). Çakır and Küçükkaplan (2012) found in their study that the effect of the current ratio gave insignificant results. Comments on the variables that yield significant results as a result of the analysis are interpreted in the conclusion section.

4. Conclusion

Developing countries such as Türkiye develop policies to increase their export revenues to overcome the economic crises in the lightest way. In this way, a direct contribution is made to macroeconomic indicators such as increasing production, easing exchange rate pressure, and increasing employment and growth rates. In this sense, Foreign Trade Capital Companies in Türkiye have great importance both in terms of their share in total industry and total exports.

Sufficient return on equity for enterprises increases financial resilience and thus enables enterprises to overcome financial difficulties more easily in difficult periods. In addition, adequate return on equity ensures that enterprises can invest in new projects and allocate more resources to growth opportunities.

When the effect of the COVID-19 pandemic on the return on equity of enterprises is examined in the Foreign Trade Capital Company, it is found that the cash ratio positively affects the return on equity. Accordingly, as the ratio of companies' cash assets and securities to pay short-term debts increases, their return on equity increases. In this case, a high cash ratio means that enterprises have sufficient liquidity to pay their short-term debts. The increase in the capacity to pay short-term debts quickly may lead to an increase in the return on equity as it will alleviate the debt burden of enterprises. High liquidity indicates that the enterprise is financially secure and may provide low-cost borrowing opportunities in periods when credit use is preferred. In addition, a high cash ratio gives enterprises the advantage of being able to take advantage of opportunities that may arise. Firms with high liquidity to pay their short-term debts provide flexibility to realise investment opportunities with the liquidity remaining after payment obligations are deducted.

In the analyses, the total debt/equity ratio negatively affects the return on equity. This ratio shows how large the debts of the enterprises are compared to the equity. The negative effect in the analysis indicates that high debt levels will increase the financial risk of enterprises. A high debt level may create difficulties in payment obligations and a high risk in obtaining credit leads to increased costs. The costs incurred cause a decrease in profitability and therefore a decrease in equity returns. Increases in the debt level of enterprises lead to missed investment opportunities and therefore adversely affect the return on equity in the long term. In addition, an increase in borrowing levels will undermine the confidence of investors, leading to a decline in stock values and adversely affecting the return on equity.

In the study, it was concluded that the total equity/total assets ratio positively affects the return on equity. This ratio shows the ratio of the equity of the enterprises to the total assets owned by the enterprise. Therefore, a high equity ratio in enterprises indicates that the investments made by the owners of the enterprises are larger than the total assets. This situation shows that there is no risk in the enterprise for both investors and creditors and it is advantageous in overcoming the crises that may be encountered. Since low risk for creditors will lead to a decrease in credit costs, it is possible to find credit costs at a lower rate than the cost of equity utilisation. Low credit costs have a positive effect on the profitability of the enterprises, causing a positive impact on return on equity. In terms of stocks, investors prefer the stocks of the enterprise due to low risk and financial soundness, leading to an increase in the value of the enterprise and therefore an increase in the return on equity.

The total debts/total assets ratio has a positive effect on return on equity. This ratio reflects the ratio of short and long-term debts to total assets. It shows how much of the debts of the enterprises are covered by the assets they own and how much of them are covered by using equity. Enterprises can continue their activities by borrowing and at first sight, it may seem to be an effect that reduces profitability due to financing costs, but if the cost of debts is lower than the return on assets, it has a positive effect on the company's profit and this situation ensures that the return on equity is positively affected. In addition, if enterprises can generate high returns from the assets obtained by borrowing, this also contributes positively to profitability.

According to the results of the analyses, it is concluded that the cost of goods sold/inventories ratio negatively affects the return on equity. If the cost of inventories of the enterprises is higher than the cost of goods sold, it means that the enterprise keeps its inventories for more time than it should be to sell them. This situation reduces profitability and thus adversely affects the return on equity. The high cost of goods sold means that enterprises narrow the profit margin that they can obtain for each product. In addition, in this case, the enterprise misses the opportunity to turn to advantageous investments instead of selling the inventories. Further, high inventories cause deterioration in the cash flow of enterprises and cause the enterprise to have problems in financing its activities. Since the Foreign Trade Capital Companies, which are the subject of the research, were able to find the desired

price equivalents in international markets for the products in their inventories during the pandemic period, the decrease in inventory inversely affected the return on equity of the enterprises positively.

In the study, it is determined that the net sales/trade receivables ratio negatively affects the return on equity. This ratio reflects how effectively the enterprises manage their trade receivables. A high level of trade receivables may indicate that the enterprise has problems in collecting its receivables. Since the delay in trade receivables will affect cash flow, it means that the enterprise may experience difficulties in realising its activities. The closures and restrictions taken in the first place during the pandemic period caused great difficulties in the trade receivables of the enterprises. This situation led to a decrease in the profitability of enterprises that had problems in the collection of cash trade receivables and thus, the return on equity was negatively affected.

The current assets/fixed assets ratio positively affects the return on equity. This ratio gives information about the asset structure and liquidity of the enterprises. The fact that current assets are higher than fixed assets indicates that the liquidity of the enterprise is higher. High liquidity means that enterprises are strong in fulfilling their short-term debts and the enterprise is financially stable. Enterprises with high liquidity have an advantage both in terms of utilising opportunities and in terms of creditworthiness. With the advantage of low-cost borrowing, enterprises can support the increase in their profitability. This situation positively affects the return on equity as shown by the results of the analyses.

According to the results obtained from the analysis, it is concluded that the fixed assets/permanent capital ratio positively affects the return on equity. The high level of this ratio indicates the financial stability of the enterprise because it means that the enterprise has sufficient capital resources to finance its long-term investments. It also shows that the enterprises have sufficient resources for the renewal of their existing assets. In addition to showing that enterprises can also provide resources for new projects, it also creates long-term credit opportunities when needed. Therefore, the fixed assets/permanent capital ratio positively affects the return on equity in a way that supports the results of the analyses.

As a result of the analyses, it was determined that the COVID-19 pandemic positively affected the financial performance of Foreign Trade Capital Companies in terms of return on equity. After the decline in exports in the first quarter of 2020, when the pandemic was announced in Türkiye, the increase in exports in the period until the second quarter of 2022, which covers the analysis period, coincides with the results of the analysis. One of the main reasons for the increase in exports can be interpreted as the fact that many countries, especially European countries, have seen Türkiye as an alternative supply centre by reducing their foreign trade with China. Türkiye's export volume during the COVID-19 pandemic period can also be evaluated as Türkiye has managed to respond quickly to this supply need in the international market by developing the right policies. Türkiye, with its geographical location, geopolitical importance, organised industries, and highly mobile production capability, turned this situation into an opportunity and managed to increase its export revenues during the pandemic period.

Another reason for the increase in export figures is the support and incentives implemented by the government during the COVID-19 pandemic. The "Economy Stability Support Package" of 250 billion TL in total, 100 billion TL in the first stage and an additional 150 billion TL in the ongoing part of the COVID-19 pandemic, the stock financing support offered especially to exporters, the extension of the time limits for the repayment of rediscount credits, the provision of facilities to exporter enterprises in Eximbank repayments, and the provision of loans at favourable rates to exporter enterprises in need of financing, especially by three state banks, can be considered as another reason for the increase in exports during the COVID-19 pandemic.

Türkiye reached the highest export volume in its history during the COVID-19 pandemic with her successful response to the demand for alternative workshop states needed in international trade and

the incentives implemented by the government. It is recommended to update the ongoing foreign trade agreements and to conclude new foreign trade agreements to increase the export volume achieved as a result of these developments and to ensure continuity in the upward trend.

AUTHORS CONTRIBUTION

The introduction and literature review sections of this study were written by the first author, and the other sections were written by the first and second authors.

STATEMENT OF CONFLICT OF INTEREST

There is no financial conflict of interest with any institution, organization, or person and there is no conflict of interest between the authors.

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