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Determinants of Export Performance in Emerging Market Economies: New Evidence from a Panel Quantile Regression Model

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ABSTRACT

Export is a key driver of economic growth in emerging market economies, hence, studying the factors that influence export performance is a crucial and important phenomenon. With the use of a panel quantile regression model and annual data, we evaluate the fundamental variables affecting exports in the Brazil, Russia, India, China, and South Africa (BRICS countries), as well as Turkey, Egypt, Indonesia, and Colombia, between 1980 and 2020. Export is the model's dependent variable, while the nominal exchange rate, foreign direct investments, inflation rate, and the economic growth rate based on Kaldor's growth model are its independent variables. According to the findings, the nominal exchange rate has a positive impact on export at various export levels. Therefore, at both low and high levels of export, exchange rate has a greater impact on export. On the other hand, export at the lowest levels is positively impacted by economic growth and foreign direct investments. The impact of economic growth and foreign direct investments on export, however, are insignificant as export volume rises. Finally, even if there is a positive correlation between inflation and export when the export volume is high, there is no significant relationship when exports start to increase. The findings demonstrate that macroeconomic factors significantly affect export in emerging market economies.

Keywords: Export performance, Emerging market economies, Panel quantile regression model

JEL Classification: F14, F44

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1. Introduction

Global trade has undergone a radical transformation process recently. Especially since the 1980s, Far East Asian countries such as China, Taiwan, South Korea and Singapore have adopted an export-led growth strategy. As a result, international trade has shifted from developed countries to these countries (UN, 2021, p. 44). In later periods, the same strategy was applied in other emerging market economies such as Brazil, India, South Africa, Indonesia and Egypt. As a matter of fact, while the growth rate of exports in the BRICS countries (Brazil, Russia, India, China, and South Africa) was 13.3% in the mid-1990s, this rate was 49.8% in a short period (ten years). Correspondingly, the share of exports in GDP increased from 9.2% to 26.6% within the same period (Morazan, 2012, p. 18).

Turkey is one of the countries that determines its growth strategy with an export focus. As a result, while the share of exports in GDP was below 10% in the 1980s, it reached 20% after the 2000s (TUIK, 2014, p. 440). Furthermore, the basis of the "Turkish Economy Model," which Turkey put into practice in 2022, is foreign trade surplus based on competitive exchange rate policy (Yumuşak, 2022). In summary, the export-oriented growth strategy continues to be implemented, especially for many emerging market economies.

Since international trade offers various opportunities to countries in terms of economy, foreign trade still maintains its importance for many countries. It is observable that the economic performance of countries with increasing export capacity also tends to increase. What is more, exports play an important role in the balance of payments, employment, economic dynamism, and growth of underdeveloped and developing countries experiencing capital shortages (Bhavan, 2016).

The question that comes to the fore at this point is what factors determine a country's export performance. According to theory of economics, one of the important variables that determines the competitiveness of a country is the value of the national currency (Jyoti, 2021). On the other hand, especially in the recent

period, many studies have been conducted on the effect of foreign direct investment on export potential, suggesting that foreign investments have various contributions such as encouraging domestic capital, helping new product development and technology transfer, providing ease of access to new and large markets and finally increasing the technical ability of the workforce (Zhang, 2006). Nevertheless, factors like purchasing the installed capacity to facilitate production for domestic demand can reverse the efficiency of foreign direct capital (Aktar, Demirci and Öztürk, 2009).

One of the factors that is among the determinants of exports is the phenomenon of inflation. In times of high inflation, while the competitiveness of the country decreases, uncertainty increases. This situation can directly affect exports through foreign demand and investments (Jacob and Raphael, 2021). Growth is another dimension of the issue. Although academic studies largely concentrate on the growth effect of exports, the effect of growth on exports is an important question worth explaining. It has been shown that growth increases specialization and productivity, while at the same time, it reduces unit costs, and as a result, has a positive effect on exports (Hatemi-J and Irandoust, 2000).

The aim of this paper is to determine the main dynamics that determine the exports of emerging market economies. For this purpose, annual export, exchange rate, foreign direct investment, growth and inflation rate data of the 1980-2020 period from the BRICS countries as well as those from Turkey, Egypt, Indonesia and Colombia ere used. The method used was the panel quantile regression method, which allows us to see the effects of each variable in different percentiles.

The paper will contribute to the literature in many ways. The first of these is the effect of growth on exports. In fact, the relevant literature focused on the growth effect of exports and causality analysis was used as a method. Therefore, the impact of growth on exports is an important question mark that needs to be clarified, especially for emerging countries. Secondly, the possible impact of the inflationary pressure that emerged after the Covid-19 pandemic on the exports of such countries is shown. Finally, the exchange rate, which is an important

variable for the exports of emerging market economies, and the export effect of foreign direct investment are discussed.

2. Literature Review

The comparative advantage theory developed by David Ricardo at the beginning of the 19th century played an important role in the formation of foreign trade theory. The shortcomings of the Ricardian trade model were filled by Heckscher, Ohlin, and Samuelson with two products and two-sector new models, in which other factors of production such as capital are taken into account as well as labor (Helpman, 1999). While these traditional foreign trade theories emphasize comparative advantage, new trade theories focus more on imperfect competition, economies of scale, product differentiation and firm behavior. However, there is a consensus that no single theory can explain the export performance of emerging countries, in particular (Liu and Shu, 2003).

Today, it has been demonstrated that many factors can affect export performance (Chen, Sousa and He, 2016). In this context, some of the empirical studies have focused on internal variables such as firm performance, while others have focused on external variables (Beleska - Spasova, 2014). For example, such factors as companies' management structure (Lages and Montgomery, 2004), export strategy (Ling-yee, 2008), expertise in foreign trade (Ting, Guijun and Bojun, 2010), corporate structure (Abreo, Bustillo and Rodriguez, 2021) and experience (Mataveli, Ayala and Gil, 2022) have been shown to be effective on export performance. In addition, Guei (2022) and Goodwin and Pierola (2015) showed that the domestic market structure of exporting and importing countries is the determining factor for foreign trade.

Another factor that affects a country's foreign trade is macroeconomic variables such as exchange rate, income level and foreign capital investments (UNCTAD, 2015). Since these variables directly affect export performance, many studies have been conducted on this subject. However, these studies have recently centered on emerging market economies (Chen et al., 2016), as foreign

trade is seen as the key to capital accumulation, productivity and economic growth for these countries (Barcena, Prado, Rosales and Perez, 2014). As a matter of fact, the vast majority of empirical studies show that there is a positive and significant relationship between economic growth and foreign trade (Sujova, et al., 2021; Zang and Baimbridge, 2012).

For example, in the study conducted by Ho and Karim (2012) on ASEAN5+4 countries (Malaysia, Indonesia, Philippines, Thailand, Singapore, China, Japan, South Korea and India), it was revealed that increases in exchange rates affect exports positively. On the other hand, a country-specific study concluded that high inflation had a negative impact on the exports of the Philippines and India. As a result of the causality analysis for the Indian economy, Jacob and Raphael (2021) showed that the increases in exchange rate and inflation affect Indian exports positively in the long run. The reason for the positive effect of inflation on exports is claimed to be the exchange rate increases brought about by high inflation. In another analysis on India, Jyoti (2021) concluded that increases in exchange rate and world GDP positively affect Indian exports in the long run. Zhu, Ahmad, Draz, Ozturk and Rehman (2022), on the other hand, suggested that the high exchange rate policy implemented by Asian countries positively affected economic growth through exports.

Ilmas, Amelis and Risandi (2022), in their paper on Indonesia, Singapore, Malaysia, Thailand and the Philippines, showed that exports were negatively affected due to the relative change in purchasing power parities caused by inflation. Santos, et al. (2019), on the other hand, in their analysis to determine the main factors determining the export of walnuts, which is an important export product of Brazil, concluded that walnut exports are significantly dependent on the changes in the exchange rate. However, in the study by Vieira and Silva (2021) on the variables that determine the export performance of BRICS countries, it has been shown that the real exchange rate plays an important role in the exports of countries other than Brazil in the short run, but this relationship is meaningless in the long run. In the same study, it was determined that the increase in the exports of BRICS countries in the short term is dependent on imports, and exports are

affected by inflation. In studies on Turkey, Karagöz (2016) showed that increases in the exchange rate affect exports positively. However, Balcılar, et. al. (2014) concluded that Turkey's export performance was explained by wages, productivity and world demand, rather than exchange rate changes.

The positive effect of exchange rate on exports is an important research topic not only for developing or emerging market countries but also for developed countries. Correspondingly, Huchet-Bourdon and Korinek (2011) investigated the sensitivity of exports in the agricultural and mining sectors in the Euro Zone, USA and China to changes in exchange rates, suggesting that the exchange rate is an important indicator for exports. Moreover, it is observable that the positive effect of exchange rate on exports is higher in the long run. However, there are also studies showing that the depreciation of the national currency, especially in developed countries, does not necessarily offer a significant advantage for these countries (Alexander and Reza, 2022).

Some of the studies on foreign trade have focused on the relationship between foreign direct investment and export. For example, in the panel data analysis for China, it was concluded that the most important determinants of exports are foreign direct investment and labor costs (Liu and Shu, 2003). Mitic and Ivic (2016), in their paper for 11 Balkan countries that are members of the European Union, showed that foreign direct investments had the most positive effect on high-tech exports of these countries. In the causality analysis on India, Sultan (2013) showed that there is no relationship between foreign direct investment and exports in the short run, but there is a significant relationship between the two variables in the long run. Aktar, et al. (2009), on the other hand, in their analysis for Turkey, concluded that foreign direct investments did not increase exports since they purchased the existing installed capacity through privatization, did not create an additional capacity, and produced for domestic demand.

Theoretically, the output in the classical production function depends on macroeconomic variables such as capital, labor and exports. The positive correlation between exports and growth is called export-led growth hypothesis

in the literature. In this respect, Che and Zhang (2022) in their study of 190 countries, Saraç (2013) for Turkey, Kılavuz ve Topçu (2012) for 22 developing countries, Parida and Sahoo (2007) for India, Pakistan, Bangladesh and Sri Lanka, and Kaushik and Klein (2008) for India showed that exports have a positive effect on economic growth. In addition, Kalaitzi and Chamberlain (2020) showed that oil exports had an effect on growth for Gulf Cooperation Organization member countries (Bahrain, Kuwait, Oman, Suudi Arabia and United Arab Emirates) and Şahin (2019) displayed that high technology product exports did the same for Turkey. However, based on Kaldor's economic growth model, growth is likely to have a positive effect on exports. According to Kaldor, the increase in specialization and productivity encouraged by the increase in output can increase exports by reducing unit costs (Hatemi-J and Irandoust, 2000). However, there are very limited studies in the literature on the export effect of growth in developing countries. For example, the causality analyses of Hatemi-J and Irandoust (2000) for Nordic countries (Sweden, Norway, Denmark, Iceland, Finland), Abbas (2012) for Pakistan and Singh (2015) for India showed that economic growth increases exports.

3. Model, Data and Empirical Findings

3.1. Model

The Model, which was created by considering the current literature together with the foreign trade theory (UNCTAD, 2005; Ho, 2013; Ilmas, et al. 2022), is shown in equation (1).

$$EX_{q_{it}}(\tau|X_{it}) = \beta_0 + \beta_1(\tau)ER_{it} + \beta_2(\tau)GDP_{it} - \beta_3(\tau)INF_{it} + \beta_4(\tau)FDI_{it} + e_{it} \quad (1)$$

$EX_{q_{it}}$ in equation (1) is the dependent variable, representing the export amount, "**τ**" quantiles, X_{it} explanatory variables and e_{it} errors. From the independent variables, ER_{it} shows nominal exchange rate, GDP_{it} gross domestic product, INF_{it} inflation rate, and FDI_{it} foreign direct investment. There are 9 cross sections and 41 time series in the model, the total number of observations (41*9 = 369) being 369.

In the case of a depreciation of the national currency, in other words, an increase in the exchange rate, it is expected that the coefficient of the ER_{it} variable β_1 will be positive, since the export products will theoretically become cheaper in terms of foreign currency. It is expected that the coefficient of the GDP_{it} variable β_2 will be positive, since the increase in the specialization and productivity caused by the increase in GDP also causes a decrease in the unit cost. Due to the uncertainty created by inflation and the loss of competitive advantage, the coefficient of the INF_{it} variable, β_3, is expected to be negative. Finally, since the increase in foreign direct investment is expected to affect exports positively, the coefficient of the FDI_{it} variable, β_4, is expected to be positive.

3.2 Data

The data used in the analysis consists of the annual data of the BRICS countries and Turkey, Egypt, Indonesia and Colombia covering the years 1980 - 2020. Data were compiled from OECD and World Bank databases. The consumer price index was used to represent inflation data, the gross domestic product growth rate was used to represent the growth rate, the nominal exchange rate was used to represent the exchange rate, the ratio of foreign direct investment was used to gross domestic product to represent foreign direct investment, and the ratio of exports to gross domestic product was used for the export variable.

3.3 Method

Cross-section dependency, which is defined as the interaction between the groups that make up the cross-sections, is accepted as the equivalent of the serial correlation in the time series. In this case, traditional t and F tests using standard variance-covariance estimators can result in inconsistent estimates. Therefore, if cross-sectional dependence is observed, first of all, stationarity examinations that take this problem into account should be carried out. (Baltagi, 2008; Tatoğlu, 2017).

There are many tests in the literature that test the cross-section dependence for different N and T combinations. In the case of N fixed and $T\rightarrow\infty$ (T>N), the

Breusch and Pagan (1980) LM test is used to test the cross-section dependence in the panel (Baltagi, Feng and Kao, 2011, p. 137). In the following process, the Breusch-Pagan LM test is called LM_{adj} test; it has been improved and its deviation has been corrected by Pesaran, Ullah and Yamagata (2008).

The assumption that there is no cross-section dependency when performing panel data analysis is seen as a rather strict restriction in applied research. For this reason, second-generation panel unit root tests have been developed that take into account cross-sectional dependence (Pesaran, 2004). The cross-section dependence is reflected in the testing process in three different ways. The first of these is to calculate the cross-sectional average from the individual series of the sections that make up the panel and to subtract the averages calculated from all the series, thus reducing the effect of the cross-sectional dependence (Levin, Lin, and Chu, 2002, p. 14). In the second approach, tests taking into account the SUR-type cross-section dependence were developed, while in the third approach, the idea of modeling the cross-section dependence through common factors was taken as bias (Pesaran, 2007, p. 277).

The CIPS (Cross-section Im, Pesaran and Shin) panel unit root test proposed by Pesaran (2007) includes cross-sectional correlation in the model through factors. In his study, in which he used the mean of the cross-sections taken according to time of the individual series, forming the cross-sections as a tool variable for the factors that could not be observed in the model, he claimed that this method eliminated the cross-section dependency. Pesaran (2007) extended the Augmented Dickey-Fuller (ADF) regression with the cross-sectional averages and delayed values of the series and argued that the correlation between groups was destroyed by taking the first-order difference of this regression (Pesaran, 2007, p. 277).

Taylor and Sarno (1998), on the other hand, proposed the multivariate Augmented Dickey-Fuller (MADF) test, which is similar to the classical single equation ADF test. The null hypothesis of the MADF panel unit root test is: $H_0 = \sum_{j=1}^{k} \rho_{ij} - 1 = 0 \, , \forall_i = 1, \dots , N$. The MADF test statistic is the standard Wald test statistic and is shown as follows:

$$MADF = \frac{\left(\iota - \varphi\hat{\beta}\right)\{\varphi[Z'(\hat{\lambda}^{-1} \otimes I_T)Z]^{-1}\varphi'\}\left(\iota - \varphi\hat{\beta}\right)N(T-k-1)}{\left(Y - Z\hat{\beta}\right)'(\hat{\lambda}^{-1} \otimes I_T)(Y - Z\hat{\beta})} \quad (2)$$

The "ϕ" in this equation is the *NxN(k+1)* dimensional block diagonal matrix; "ı" is a vector of *Nx1* dimensional ones, and $\hat{\beta}$ and $\hat{\lambda}$ are consistent estimators of β and $\hat{\beta}$. The MADF test statistic shows a χ^2 distribution with N degrees of freedom (Tatoğlu, 2017, p. 80).

In classical regression models estimated within the framework of the Least Squares (LS) method based on the minimization of the error sum of squares, the error terms have a normal distribution; the mean is zero and the variance is constant; it is also based on restrictive assumptions, as there is no autocorrelation problem. In the quantile regression approach, the estimations are based on the conditional mean function. This function defines how the mean of the dependent variable changes with the independent variable(s). The most common problem encountered in classical regression models is that the error terms do not show a normal distribution due to outliers that occur with the effect of events such as economic crises or any political shock. In this case, the reliability of the regression estimation based on the sample arithmetic mean remains weak (Güriş and Çağlayan, 2010, p. 181).

From this point of view, the quantile regression model developed by Koenker and Basset (1978) based on the minimization of absolute deviations, in which the entire distribution of the response variable is estimated, is proposed instead of the conditional mean depending on the sample mean or a single value. Thus, instead of making an estimation based on the average effects of the variables studied, it is possible to determine the effects in different quantiles (percentiles) and at the same time to obtain a detailed picture of all observation values. Simply based on a regression model like the one below, the operations in quantile regression can be defined as follows (Koenker and Hallock, 2001; Koenker, 2004).

$$Min \sum_i \tau \left|(Y_i) - (a + \sum_k \beta_k(\tau)X_{ki})\right| + \sum_i (1-\tau)\left|(Y_i) - a + \sum_k \beta_k(\tau)X_{ki}\right| \quad (3)$$

3.4 Empirical Findings

Before proceeding to the empirical findings, the descriptive statistics of the variables are shown in Table 1.

Table 1. Descriptive Statistics

Variables	Observation *(NxT)*	Mean	Std. Deviation	Min.	Max.
EX	369 *(41x9)*	19.33424	7.424334	5.196222	52.96814
ER	369 *(41x9)*	1031.293	2786.40	2.28E-11	14582.20
GDP	369 *(41x9)*	4.612174	3.74274	-13.1267	15.19154
FDI	369 *(41x9)*	1.717372	1.602321	-2.75744	9.348567
INF	369 *(41x9)*	54.73125	248.746	-1.800	2947.70

As can be seen from Table 1, the difference between the smallest and largest values of the $EX_{q_{it}}$ variable in the panel is remarkable. This is because countries with low and high export percentages coexist in the model. In such a case, if all countries are considered in the same group, the factors affecting the high-low export percentages will not be determined exactly. For this reason, the export percentages of countries ranging from 5% to 53% will be divided into segments and the effect of different percentage segments will be evaluated.

In this context, firstly, the results of the Breusch-Pagan LM cross-section dependence test and the LM_{adj} cross-section dependence test results are shown in Table 2.

Table 2. Cross Section Dependence Test Results

Variables	LM Test Statistics	$LM_{adj.}$ Test Statistics
EX	153.0086*** (0.0000)	16.60498*** (0.0000)
ER	801.2388*** (0.0000)	103.2284*** (0.0000)
GDP	125.2881*** (0.0000)	12.90067*** (0.0000)
FDI	222.2043*** (0.0000)	25.81164*** (0.0000)
INF	1020.902*** (0.0000)	132.5384*** (0.0000)

Note: *,** and *** indicate significance levels of 0.10, 0.05 and 0.01, respectively.

As can be seen in Table 2, the null hypothesis stating that there is a cross-sectional dependence was rejected for all variables according to the Breusch-Pagan LM and the deviation-corrected Breusch - Pagan LM_{adj} tests. Thus, it was understood that there was a problem of cross-sectional dependence in the variables, and at this point, it was seen that the second-generation panel unit root tests that takes into account the problem in question while testing the existence of unit root in the variables should be preferred. Table 3 shows the panel unit root test results.

Table 3. CIPS (2007) Panel Unit Root Test Results

Variables	CIPS Statistics (Trend)	CIPS Statistics (Intercept and Trend)
ER	-2.216 *	-3.421 ***
FDI	-3.502 ***	-3.568 ***
EX	-3.110 ***	-3.922 ***
GDP	-4.645 ***	-4.661 ***
INF	-2.962 ***	-3.108 ***

Note: *,** and *** indicate significance levels of 0.10, 0.05 and 0.01, respectively.

According to Table 3, it is seen that the null hypothesis expressing the existence of unit root in the variables at different significance levels is rejected and that the variables do not contain unit roots. Table 4 shows the MADF panel unit root test results.

Table 4. Taylor - Sarno (1998) MADF Panel Unit Root Test Results

Variables	MADF Statistics (Intercept)
EX	55.438**
GDP	209.081**
ER	67.720**
FDI	69.800**
INF	81.998**

Note: i) *,** and *** indicate significance levels of 0.10, 0.05 and 0.01, respectively.
ii) The critical value for the MADF test statistic is 23.218 at a=0.05 significance level.

Table 4 shows the MADF panel unit root test results. When the MADF test statistics are examined, it is seen that the null hypothesis expressing the existence of a unit root is rejected and the variables do not contain a unit root. Thus, in line with the results obtained from Table 3 and Table 4, it is seen that the levels of the

variables are stationary and there is no issue in using the in their levels. Table 5 shows the estimation results of the panel quantile regression model.

Table 5. Estimation Results of the Panel Quantile Regression Model

Dependent Variable: EX					
	Constant	**ER**	**GDP**	**FDI**	**INF**
Quantile 1	2.316408***	0.03441***	0.01115	0.178883***	-0.02602
Std Error	(0.058069)	(0.013043)	(0.009614)	(0.025628)	(0.015013)
t Stats.	[39.89]	[2.64]	[1.16]	[6.98]	[-1.13]
Quantile 2	2.419597***	0.021482**	0.018598**	0.142554***	-0.01295
Std. Error	(0.042718)	(0.00845)	(0.009566)	(0.030108)	(0.012312)
t Stats.	[56.64]	[2.54]	[1.94]	[4.73]	[-1.05]
Quantile 3	2.492318***	0.008485	0.026386***	0.109377*	0.006581
Std. Error	(0.048261)	(0.012498)	(0.009067)	(0.058124)	(0.016413)
t Stats.	[51.64]	[0.68]	[2.91]	[1.88]	[0.40]
Quantile 4	2.643103***	0.00365	0.020477*	0.020275	0.025037
Std Error	(0.06499)	(0.013323)	(0.011191)	(0.049908)	(0.016396)
t Stats.	[40.67]	[0.27]	[1.83]	[0.41]	[1.53]
Quantile 5	2.75071***	0.003212	0.017757	-0.02	0.029728*
Std. Error	(0.061402)	(0.012953)	(0.010964)	(0.032829)	(0.015519)
t Stats.	[44.8]	[0.25]	[1.62]	[-0.61]	[1.92]
Quantile 6	2.89022***	0.001248	0.009053	0.005026	0.031393**
Std Error	(0.05643)	(0.011868)	(0.009461)	(0.029949)	(0.014109)
t Stats.	[51.22]	[0.11]	[0.96]	[0.17]	[2.23]
Quantile 7	3.024733***	0.010306	0.002406	0.025105	0.023899**
Std. Error	(0.049877)	(0.009141)	(0.009145)	(0.025822)	(0.010547)
t Stats.	[60.64]	[1.13]	[0.26]	[0.97]	[2.27]
Quantile 8	3.136411***	0.013192**	-0.0012	0.037861	0.017282**
Std. Error	(0.044146)	(0.006811)	(0.006984)	(0.028746)	(0.008479)
t Stats.	[71.05]	[1.96]	[-0.17]	[1.32]	[2.04]
Quantile 9	3.202357***	0.010949*	0.003409	0.031521	0.022567**
Std. Error	(0.042435)	(0.006329)	(0.005878)	(0.02331)	(0.008908)
t Stats.	[75.46]	[1.73]	[0.58]	[1.35]	[2.53]

Not: i) *,** and *** indicate significance levels of 0.10, 0.05 and 0.01respectively.

According to the panel quantile regression results in Table 5, the export effect of the exchange rate is positive for all quantiles and is statistically significant in the first, second, eighth and ninth quantiles. In other words, the positive effect of exchange rate, which is one of the most important determinants of exports, is statistically significant in low and high quantiles. It is seen that the effect of exchange rate on exports is high in low quantiles. The results are important in that

they show that the exchange rate affects exports positively, especially at low and high export levels. The positive effect of the exchange rate at low export levels shows that exporters tend to export by making use of their competitive advantage. As a matter of fact, while the increase in foreign demand can be answered by using the missing capacity in the short term, the scale needs to be enlarged in the long term. As exports increase, this relationship becomes meaningless in medium quantiles, which may result from the fact that businesses reach a certain capacity, and from their search for new markets as well as their profit realization. In fact, as a result of exporters' capacity increase for more exports and reaching new markets, the exchange rate directly increases exports in high quantiles.

Considering the effect of economic growth on exports, it is positive for all quantiles, except for the eighth quantile while it is statistically significant for the second, third and fourth quantiles. The results show that economic growth has a positive effect on exports, especially in low quantiles. But as exports increase, the effect of economic growth on exports is meaningless. The absence of a significant relationship between growth and exports at high export levels indicates that the positive effect of growth on exports is not sustainable. In other words, Kaldor's growth hypothesis is valid for low export levels but not for high export levels. The main reason the results are like this for emerging market economies is that growth does not bring specialization, efficiency and cost advantages for production in foreign trade.

As in the exchange rate variable, the coefficient of the foreign direct investment variable is positive for all variables, and it is positive for the first, second and third quantiles. The effect of foreign direct investment decreases as exports increase up to the fourth quantile level. The results show that foreign direct capital affects exports positively when exports tend to increase, but does not have any effect at high export levels. This may have various reasons. The first is that direct investments buy installed capacity rather than creating new capacity. Second, production is done to meet domestic demand. As a matter of fact, the privatization practices that are common in developing countries and their dynamic population as well as their large market support our arguments.

The effect of inflation on exports is insignificant between the first and fourth quantiles, but significant between the fifth and ninth quantiles. According to the results of the analysis, inflation has a positive effect on exports in quantiles that are significant. This shows that as exports increase, the positive effect of inflation on exports increases. However, the increasing effect of inflation on exports decreases in the transition from medium to high quantiles. When exports are high, one of the reasons for the positive relationship between inflation and exports is the increase in foreign demand. While external demand affects the general level of prices, it also causes an increase in exports. But the acceleration of this increase decreases. The reason for this is that the increased foreign exchange inflow reduces the exchange rate-based inflation risk, especially for developing countries. However, exchange rate, inflation and export variables move together in high quantiles. This shows that the sensitivity of exports to exchange rate increases is higher than inflation. In other words, when it comes to high exchange rates and high inflation, the priority of exporters is their earnings rather than the uncertainty in the domestic market.

4. Conclusion

One of the sources of capital needed by emerging market economies is exports. For this reason, one of the prominent economic policies implemented by emerging market economies is the export-based growth strategy. In this case, the factors that determine the export of emerging market economies come to the fore. In this paper, the effects of nominal exchange rate, growth rate, foreign direct investment and inflation rate variables on the exports of BRICS countries and Turkey, Egypt, Indonesia and Colombia were analyzed. For this, a panel quantile regression method was used, which allows us to see the effect in different percentiles of each variable.

The results of the analysis show that the exchange rate affects exports positively at low and high export levels. This is important as it shows that the exchange rate provides a competitive advantage to emerging market economies and that they are increasing their capacity. However, as the amount of exports increases, the

significant relationship between the exchange rate and exports disappears. This situation shows that exporters, who respond to the increases in the exchange rate with capacity increases, cannot respond to the increasing demand until they scale up. As a matter of fact, as a result of the enlarged scale, the effect of the exchange rate on exports becomes statistically significant again at high export levels.

The growth rate in emerging market economies affects exports positively at low levels of exports. However, as the export volume increases, the significant relationship between the growth rate and exports disappears. This shows that growth initially increases exports due to reasons such as specialization, productivity increase and cost advantage, but this advantage disappears as the export volume increases. For this reason, emerging market economies' orientation towards high value-added products through R&D expenditures and technology transfer, as well as specialization, will increase their export potential.

Another important variable for export is foreign direct investment. The effect of foreign direct investment is positive at low levels of exports. However, this effect disappears when exports increase. The fact that investments are aimed at meeting domestic demand limits this effect. Inflation has a positive effect with the increase in exports. In such a situation, where foreign demand is the determinant, on the one hand, the general level of prices increases while the volume of exports increases.

Ethics Committee Approval: The data of the study were taken from the statistical database of the OECD and the World Bank. No changes were made during data collection, compilation and editing. The study does not have a data set that requires "Ethics Committee Approval".
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