ANALYSIS OF FIRMS' MOTIVATIONS IN ENTERING THE LIST OF THE TOP 500 LARGEST INDUSTRIAL ENTERPRISES (1993-2021)

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ABSTRACT

The study analyzes the motivating factors for firms seeking entry into the list of 500 large industrial enterprises during the period 1993-2021. In this context, a market entry model, one of the market behaviors within industrial organization approaches, is established, and the logistic regression method is employed. The model encompasses six sub-sectors, all of which have maintained a presence on the list of 500 large industrial enterprises since 1968, including the manufacturing of food, beverages, and tobacco products; textiles, wearing apparel, and leather products; chemical, petroleum, coal, rubber, and plastic products; other non-metallic mineral products; basic metals; and fabricated metal products. Our broader findings reveal that firms are primarily motivated by sector-specific variables to seek entry, such as the number of employees, productivity, equity, and market growth. In addition to these dynamics, the public sector's research and development expenditures, foreign direct investments, and export value are the macroeconomic indicators that motivate market entry.

Keywords: Industrial Organization, Market Behavior, Market Entry, 500 Large Industrial Enterprises, Industrial Sector

500 BÜYÜK SANAYİ KURULUŞU LİSTESİNE GİRİŞTE FİRMALARI MOTİVE EDEN FAKTÖRLERİN ANALİZİ (1993-2021)

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ÖZET

Çalışma, 500 Büyük Sanayi Kuruluşu listesine girmek için firmaları motive eden faktörleri 1993-2021 dönemi için analiz etmektedir. Bu kapsamda endüstriyel organizasyon yaklaşımları altında piyasaya giriş modeli oluşturulmakta ve lojistik regresyon yöntemi kullanılmaktadır. Model gıda, içki ve tütün ürünlerinin imalatı; dokuma, giyim eşyası ve deri ürünleri; kimya, petrol, kömür, kauçuk ve plastik mamülleri sanayi; taş ve toprağa dayalı sanayi (petrol ve kömür türevleri hariç); metal ana sanayi; ve metal eşya, makina ve teçhizat, ulaşım aracı, ilmi ve mesleki ölçme aletleri sanayi olmak üzere 1968'den bu yana 500 büyük sanayi kuruluşu listesinde yer alan altı alt sektörü kapsamaktadır. Bulgular, firmaların piyasaya girişte öncelikli olarak çalışan sayısı, verimlilik, özsermaye ve piyasanın büyüme potansiyeli gibi sektöre özgü değişkenler tarafından motive edildiğini ortaya koymaktadır. Bu dinamiklerin yanı sıra kamu sektörünün araştırma geliştirme harcamaları, doğrudan yabancı yatırımlar ve ihracat değeri makro iktisadi göstergeler olarak piyasaya girişi motive eden diğer faktörlerdir.

Anahtar Kelimeler: Endüstriyel Organizasyon, Piyasa Davranışı, Piyasaya Giriş, 500 Büyük Sanayi Kuruluşu, Sanayi Sektörü

INTRODUCTION

The industrial sector plays an important role in the growth and development processes of countries. In many cases, it is accepted as the primary driver of economic growth, and industrialization is often seen as a prerequisite for development (Cornwall, 1977). Turkey shares this perspective and places significant importance on its 500 largest industrial enterprises. However, it's important to note that historically the Turkish industrial sector is predominantly composed of small and medium-sized enterprises (SMEs). Nonetheless, the contribution of these firms to the country's value-added and production is not as high. On the contrary, a small number of large-scale firms, particularly the 500 largest industrial enterprises in Turkey, make a substantial contribution to the country's economy. Based on data provided by the Istanbul Chamber of Industry (İSO), these 500 firms made a substantial impact on the industrial sector by contributing 19% of the total value added in 2020, which increased to 21% in 2021. Their significance becomes even more pronounced when evaluating their role in bolstering Turkey's global competitiveness, especially in the realm of international competition. Additionally, the 500 largest industrial enterprises play a vital role in increasing the volume and diversifying product range of Turkey's trade, making a significant and enduring contribution to the nation's economic conditions. As of 2021, they accounted for a significant share of the country's exports, representing 38.1% of Turkey's total exports and 39.4% of industrial exports (ISO, 2022). To summarize, Turkey's industrial sector is characterized by the coexistence of numerous small and medium-sized enterprises and a smaller number of large-scale firms. While SMEs predominate in terms of quantity, their individual contributions are modest, whereas the 500 largest industrial enterprises play a vital role in driving economic growth, increasing value added, and enhancing Turkey's international competitiveness.
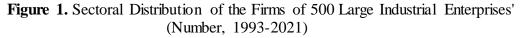
Given these characteristics, it is evident that the 500 large industrial enterprises hold a position of great significance within both the industrial sector and the broader Turkish economy. Hence, governments also monitor the 500 large industrial enterprises and enact essential policy measures when required to enhance their standing in international competition. Nevertheless, it is insufficient to analyze the 500 largest industrial enterprises solely within the context of national interests. Evaluating these firms is equally vital for the firms themselves. Every large-scale firm aspires to lead within the nation and wield influence over national policies. For this reason, firms make great efforts to increase the value of sales from production which is the most important factor considered in the ranking of the 500 largest industrial enterprises. However, there are other factors that firms take into account in their motivation to increase the value of sales from production. Firm-sector-specific variables and macroeconomic indicators such as profit, efficiency level, competition, crises, supports provided by governments, investments, etc. in the previous period affect the motivation of firms in their efforts to enter the list. This is because positive developments in macroeconomic indicators or the growth potential of the sector may motivate firms to increase their production capacity. The crisis may reduce firms' production motivation, while increases in public support may re-motivate them.
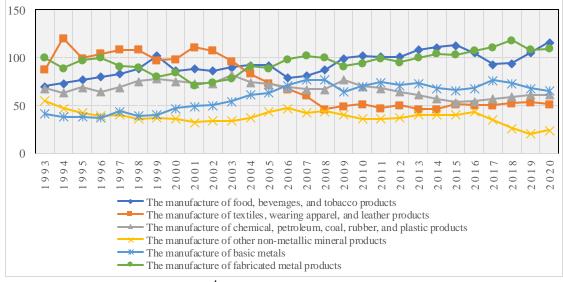
For this reason, it is important to evaluate the factors affecting the market behavior of large-scale firms in the industrial sector that are included in the list of 500 large industrial enterprises and have the potential to be included in the list.

While numerous studies exist in the literature focusing on the 500 largest industrial enterprises (Kaynak, 2016; Ukav and Emeksiz, 2017; Ediz and Önder, 2019; Yılmaz, 2020), a notable gap exists concerning research dedicated to entry into this list. Hence, this study seeks to address this gap by examining the motivational factors influencing entry into the ranks of the 500 large industrial enterprises for the years 1993-2021.

ANALYSIS OF 500 INDUSTRIAL ENTERPRISES: MARKET ENTRY MODEL

The primary objective of this study is to uncover the main motivations driving firms within the industrial sector that aspire to attain a position among the 500 largest industrial enterprises during the analysis period from 1993 to 2021. This investigation takes into consideration a range of variables, including those spesific to the firm, sector, and macroeconomic indicators. The model developed within this framework is rooted in the market entry model derived from industrial organization theory.

Figure 1. Sectoral Distribution of the Firms of 500 Large Industrial Enterprises' (Number, 1993-2021)

Source: Authors' calculation using İSO data.

Figure 1 illustrates the sectoral distribution of firms within the 500 Large Industrial Enterprises. The number of firms operating in each sector has been decreasing and increasing over the years. This means that market entry activities are carried out effectively in these sectors. Market entry can occur directly when a firm starts operations in a new sector, or it can occur when a firm takes over another firm, or when two or more firms merge to form a single firm.

In addition, the opening of a branch of a firm in another country/region/city/district is considered as another example of market entry. Although there are various studies on market entry in the literature, the first study in this context dates back to Bain (1951). In this study, the incentives and entry barriers faced by firms in market entry are presented. While a firm's ability to create economies of scale and/or apply product differentiation, and the fact that existing firms operating in the sector have a cost advantage over those entering the sector are stated as the main entry barriers, the profitability of the sector is described as the most important incentive element. In the literature, there are various manufacturing industry and banking sector-oriented studies that follow this study. Orr (1974) is an example of this for Canada, and it can ve accepted as an expanded version of Bain (1951). Austin and Rosenbaum (1990) and Rosenbaum (1993) take into account the firm and sector-specific variables in the decision to enter the market for the years 1970-1990; Genchev (2015), Cala (2018) and Roh (2018) emphasize that macroeconomic indicators are also important for the post-2000 period. National literature generally consists of studies conducted for the manufacturing industry. Kaya and Üçdoğruk (2002), along with Günalp and Cilasun (2002, 2006), affirmed in their studies from the 1990s that firm-specific variables play a pivotal role in entering the manufacturing industry. Previous research conducted by Turanlı and Kılıç (2009), Öztürk and Kılıç (2012), İzgi and Dineri (2014), and Günal and Deliktaş (2020), covering the same period, revealed that, in addition to firm-specific variables, sector-specific factors, and macroeconomic indicators also exert significant influence on entry into the manufacturing industry. Additionally, Günal (2018) conducted an in-depth analysis of the determinants of market entry within the banking sector. It's worth noting that research in Turkey has predominantly centered on the manufacturing industry as a whole. Notably, to our knowledge, there is no known study that specifically outlines a market entry model for the 500 largest industrial enterprises.

In conclusion, it can be concluded that the factors that motivate firms vary from country to country, from sector to sector, and according to the period of analysis. In addition, it is determined that costs, profitability, production power, competitive power of the product, equity size, productivity, scale, performance, the growth potential of the sector, concentration level; as well as important macroeconomic indicators such as inflation, growth, foreign trade volume, technological developments and R&D supports, institutional structure, the strength of the law, demand for the product, and crisis sare the main motivation factors in the market entry decision.

Data set

This study analyzes the motivational factors that firms take into account in order to enter the list of 500 large industrial enterprises. 500 Large Industrial Enterprises are composed of firms operating in 12 different sub-sectors within the industrial sector. In this research, conducted for the period spanning from 1993 to 2021, we focus on six specific sub-sectors, as outlined in Table 1, based on the United Nations International Standard Industrial Classification of All Economic Activities Revision 2 (ISIC Rev.2). The rationale behind this selection is the limited availability of sufficient data observations for the remaining sectors for the 1993-2021 period.

Table 1: Sectoral Classification

1)	The manufacture of food, beverages, and tobacco products
2)	The manufacture of textiles, wearing apparel, and leather products
3)	The manufacture of chemical, petroleum, coal, rubber, and plastic products
4)	The manufacture of other non-metallic mineral products
5)	The manufacture of basic metals
6)	The manufacture of fabricated metal products

Source: United Nations International Standard Industrial Classification of All Economic Activities Revision 2, https://unstats.un.org/unsd/classifications/Family/Detail/8

This study employs the creation of a market entry model for analysis. To construct the dataset, we gather information in line with existing literature and industrial organization methodologies. Within the realm of market entry, we compile a comprehensive list of alternative variables possibly effect to influence entry into the ranks of the 500 largest industrial enterprises, as outlined in Table 2.

The "*market entry*" variable is used as the dependent variable. As an indicator of market entry, for each sector considered in the analysis, the change in the number of firms operating in these sectors and included in the 500 largest industrial enterprises is taken into account. A positive change in the total number of firms in the year of analysis is represented by the value "1" and a negative change is represented by the value "0". Years in which there is no change in the number of firms are also considered as "0". Independent variables are selected separately under 3 subcategories for firm, sector and macroeconomic indicators. Unit root tests were conducted for all variables given in Table 2 and a correlation table was created to reveal the relationship between variables. Considering the results obtained; firm-specific *total employees*, *profit*, *productivity*, and *equity*; sector-specific *scale*, *concentration*, and *growth potential of the market*; and among macroeconomic indicators, *public sector R&D support*, *private sector R&D support*, *economic freedom index*, *growth rate*, *exports* and *foreign direct investments* were included in the model. Furthermore, dummy variables, specifically crafted to capture the influence of the *2001* and *2008* crises, have been integrated into the model separately.

In Table 2, we have listed all possible indicators that may affect market entry. However, after conducting statistical checks, certain variables, namely production, value-added, total net assets, performance (Period Profit-Loss/Equity), and inflation were excluded due to high correlation coefficients (Annex 2). Additionally, the 2008 crisis did not yield significant results in any model, and therefore, it was not included in the findings. As for the two variables indicating public and private sector expenditures in R&D, a high correlation relationship was observed between them. Hence, these variables were included in the model separately. Natural logarithms have been applied to all non-proportional variables in the model. Furthermore, one-year lagged values of each variable in the model were utilized, as firms have access to the previous year's data, which can inform their behavior.

Total employees is used to represent input costs in the analysis. Since the main objective of firms is profit maximization, the profit is included in the model. Within the scope of the study, labor productivity is also taken into account and sales from production is divided by the total number of employees. Equity is included in the model to reveal the strength of firms and how firms manage their debts. In order to reveal the scale of the sector, the logarithm of net sales is taken following the literature. HHI and CR indices are calculated to represent the concentration level of the sector. Each concentration indicator is included in the model separately. HHI is used in the final model. The change in the value of sales from production is used to reveal the growth potential of the sector.

Table 2: Data Set Information

Dependent Variable: Market Entry (Binary)		
Independent variables (Sector Specific)		
Variable Name	**Data Characteristic**	**Data Description**
Employment	Total Employees	Number of Employees
Production	Sales from Production	Sales from Production (Net)
Value Added	Gross Value Added	Gross Value-Added (at Producers' Prices)
Equity	Equity	Equity Capital
Profit	Period Profit-Loss	Profit / Loss For The Period (Before Tax)
Assets	Total Net Assets	Total Assets
Productivity	Labor Productivity	Sales from Production/Number of Employees
Performance	Firm Performance	Profit-Loss/Equity
Scale	Scale of the Market	Log Sales from Production
Cr	Concentration index (HHI, CR)	$$CR_n = \frac{1}{X} * \sum_{m=1}^{n} x_m$$ $$HHI = \sum_{m=1}^{N} X_m^2$$
PGrowth	Market Growth (Sales from Production)	Change in Value of Sales From Production
Independent variables (Macroeconomic Indicators)		
Demand	Population	Change in Population (%)
P_R&D	Public Sector R&D Support	Government Budget Appropriations and Outlays on R&D and Expenditures in R&D by size group
Pr_R&D	Private Sector R&D Support	Gross domestic expenditure on R&D by sector and type of expenditure and Expenditures in R&D by size group
Inf	Inflation	Inflation rate %
EFI	Economic Freedom Index	Index overall score (scale of 0 to 100)
Crisis	2001 and 2008	Dummy variable
Growth	GDP Growth Rate	Annual growth rate (%)
Export	Export (Sector specific)	Export/Sales from Production
Fdi	Foreign Direct Investments (Sector specific)	Sector Specific Foreign Direct İnvestment (Million)

Source: Compiled by Authors.

Under macroeconomic indicators, the change in population is taken into account as an indicator of domestic demand. Within the framework of the support provided to firms, public and private sector expenditures on R&D centers by size group based on the number of employees are used in the model. The share of these expenditures in the total expenditures of the industrial sector is 86% on average for the last four years (TÜİK, 2023). Therefore, this data seems to be a good representation of R&D support for the top 500 industrial enterprises. Moreover, since investments are important for firms, FDI in each sector; exports, which is an important indicator for trade volume; GDP growth rates, which indicate the economic conditions of the country; and the economic freedom index, which is an indicator of rule of law, are included in the model.

The economic freedom index used in the study was obtained from the official website of Heritage; population, growth, and inflation data were gathered from the World Bank; sector-specific FDI, private sector - public sector R&D support were collected from Turkish Statistical Institute (TSI) and all other data were obtained from ISO 500 official website.

Model And Methodology

In samples where the dependent variable consists of two different values, 1 and 0, and the independent variables consist of discrete and continuous values, the logistic regression model produces more effective results and is therefore more preferred among panel data models. The logistic regression model reveals the effect of changes in independent variables on the dependent variable through probability values (Akay, 2015). Probability values are evaluated with the odds coefficient obtained as a result of model estimation.

Literature and a priori information are followed in determining the variables in the logistic regression model. Afterwards, one of the forward selection, backward selection, and step-by-step selection methods is chosen to determine the variables required for the model. In this context, the Log Likelihood ratio is taken into account. If the change in the Log Likelihood value is high as a result of adding a new variable to the model, the variable added to the model is considered to be an important variable for the model (Öztürk, 2010). In addition, goodness-of-fit tests should also be performed in logistic regression models.

The four alternative models determined within the scope of the purpose of the study are shown below. The step-by-step selection method was used in the creation of these models:

$$Y_{it} = \beta_0 + \beta_1 Employment_{kt} + \beta_2 Profit_{kt} + \beta_3 Productivity_{kt} + \beta_4 Equity_{kt} + \beta_5 Scale_{kt} + \beta_6 Pgrowth_{kt} + \beta_7 Concentration_{kt} + \varepsilon_i$$

(Model 1)

$$Y_{it} = \beta_0 + \beta_1 Employment_{kt} + \beta_2 Profit_{kt} + \beta_3 Productivity_{kt} + \beta_4 Equity_{kt} + \beta_5 Scale_{kt} + \beta_6 Pgrowth_{kt} + \beta_7 Concentration_{kt} + \beta_8 Demand_t + \beta_9 Growth_t + \beta_{10} EFI_t + \beta_{11} Exports_{kt} + \beta_{12} 2001_t + \beta_{13} Fdi_{kt} + \varepsilon_i$$

(Model 2)

$$Y_{it} = \beta_0 + \beta_1 Employment_{kt} + \beta_2 Profit_{kt} + \beta_3 Productivity_{kt} + \beta_4 Equity_{kt} + \beta_5 Scale_{kt} + \beta_6 Pgrowth_{kt} + \beta_7 Concentration_{kt} + \beta_8 Demand_t + \beta_9 Growth_t + \beta_{10} P\_R\&D_t + \beta_{11} EFI_t + \beta_{12} Exports_{kt} + \beta_{13} 2001_t + \beta_{14} Fdi_{kt} + \varepsilon_i$$

(Model 3)

$$Y_{it} = \beta_0 + \beta_0 + \beta_1 Employment_{kt} + \beta_2 Profit_{kt} + \beta_3 Productivity_{kt} + \beta_4 Equity_{kt} + \beta_5 Scale_{kt} + \beta_6 Pgrowth_{kt} + \beta_7 Concentration_{kt} + \beta_8 Demand_t + \beta_9 Growth_t + \beta_{10} Pr\_R\&D_t + \beta_{11} EFI_t + \beta_{12} Exports_{kt} + \beta_{13} 2001_t + \beta_{14} Fdi_{kt} + \varepsilon_i$$

(Model 4)

Where k and t represent sector level variables and time, respectively. These variables encompass various aspects, including the number of employees as a cost indicator ($Employment$), the firm's profit level ($Profit$), labor productivity ($Productivity$), the financial strength of the firm ($Equity$), the size of the sector in terms of production ($Scale$), the growth potential of the sector ($Pgrowth$), the concentration level within the sector ($Concentration$), population as an indicator of country-wide demand ($Demand$), the country's growth rate ($Growth$), public support allocated to research and development ($P\_R\&D$), private sector support for R&D ($Pr\_R\&D$), the economic freedom index reflecting the rule of law (EFI), realized export value ($Export$), the impact of crises, notably the year 2001 (2001), and foreign direct investments in each sector (Fdi).

RESULTS

Within the scope of the study, the main motivation factors affecting firms to enter the list of 500 large industrial enterprises are revealed. The results obtained for the period 1993-2021 are summarized in Table 3 which presents odds coefficients that allow the interpretation of the impact level of each variable. Basically, a positive sign in front of the coefficients indicates that the variable positively motivates market entry and a negative sign indicates that the variable negatively affects market entry. The variables are categorized into two groups: sector-specific variables and macroeconomic indicators. In addition, four models are shown in the table. The first model shows the effects of only sector-specific variables. In Model 2, all macroeconomic indicators except public and private sector R&D support are added to the Model 1. Model 3 is formed by adding public sector R&D support to Model 2, and Model 4 is formed by adding private sector R&D support to model 2.

The findings indicate that many sector-specific variables and macroeconomic indicators are effective factors in market entry. However, the fact that macroeconomic indicators affect market entry only at the 10% significance level calls into question the power of these indicators. On the other hand, firm-specific variables such as employment, productivity, and equity have a positive effect on market entry. An increase in the number of employees is an important sign that firms are growing. Therefore, it is evaluated that the increase in the number of employees motivates firms to enter the list. In addition, the increase in labor productivity and the transition

of firms to a stronger structure are also variables that positively affect firms' entry into the list. On the other hand, a change in firms' profitability does not affect market entry, contrary to expectations. Among the sector-specific variables, market scale and market growth potential are found to be significant variables for market entry. The growth of the market scale is a variable that negatively affects market entry as it will make it more difficult to enter the list. On the other hand, the growth potential of the market motivates firms to enter the list. Contrary to expectations, concentration and related competition between firms are not found to be significant motivators.

Table 3: Key Motivational Factors for Entering the List of 500 Large Industrial Enterprises

Logistic Regression Results Dependent Variable: Market Entry (dummy variable)				
Lagged Values	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Sector-Specific Variables				
Employment	1.42***	1.25***	1.79***	1.81***
	(0.64)	(0.55)	(0.99)	(0.68)
Profit	-0.93	-0.92	-0.93	-0.92
	(0.03)	(0.03)	(0.03)	(0.03)
Productivity	4.92**	6.30**	2.23**	7.91**
	(0.002)	(0.002)	(0.002)	(0.002)
Equity	3.79***	6.14***	4.90***	5.45***
	(1.48)	(1.90)	(1.57)	(2.01)
Scale	-0.01***	0.01***	-0.01***	-0.01***
	(0.39)	(0.66)	(0.55)	(0.78)
Pgrowth	2.18***	5.05***	9.66***	5.57***
	(2.34)	(5.61)	(9.91)	(5.41)
Concentration	5.06	3.56	11.50	4.47
	(0.28)	(0.07)	(0.24)	(0.07)
Macroeconomic Indicators				
Demand		1.56	1.66	1.72
		(0.93)	(1.07)	(1.42)
Growth		-0.93*	-0.92*	-0.93*
		(0.04)	(0.04)	(0.04)
P_R&D			1.75*	
			(0.97)	
Pr_R&D				2.18
				(0.39)
EFI		-0.91*	-0.84**	-0.89*
		(0.05)	(0.06)	(0.06)
Export		1.03*	1.03*	1.03*
		(0.18)	(0.18)	(0.18)
2001		-0.21*	-0.09**	-0.19*
		(0.17)	(0.11)	(0.21)
Fdi		1.01*	1.08*	1.05*
		(0.14)	(0.15)	(0.14)
constant	0.00**	0.00***	0.00***	0.00***
Sector-Spesific Fixed Effect	Yes	Yes	Yes	Yes
Observation	174	174	174	174
Log_likelihood	-102.88	-98.11	-96.45	-97.92

Source: Authors' calculation. *** p<.01, ** p<.05, * p<.1. Standart errors are in parentheses.

While macroeconomic indicators exhibit significance at the 10% level, it's essential to highlight the key variables that notably influence the analysis—namely, the economic freedom index, R&D support, foreign direct investments, and the crisis. The 2001 crisis had an adverse effect on all firms, while an increase in public R&D support and Fdi served as a motivating factor for firms. Notably, the negative impact of the economic freedom index and the associated heightened legal environment on firms' market entry warrants further examination and inquiry. As a result, although many factors motivate firms to enter the list, it is seen that sector-specific variables are much more influential.

Table 4. Summary of Factors Affecting to Entry the List

Firm-Sector-Specific Factors	Macroeconomic Factors
Employment (+)	Growth (-)
Productivity (+)	P_R&D (+)
Equity (+)	EFI (-)
Scale (-)	Export (+)
Pgrowth (+)	Fdi (+)
	2001 Crisis (-)

Source: Compiled by Authors.

Table 4 summarizes the factors that motivate and also create barriers to entry for firms seeking to enter the list of the 500 largest industrial enterprises. Consequently, consistent with expectations, market scale is a significant entry barrier. The fact that growth and economic freedom index are identified as entry barriers are contrary to expectations. More detailed analysis of these two variables by governments is required. On the other hand, the increase in qualified employment, the growth potential of the market, the strong equity capital of the firms, the R&D support of the public to large-scale firms, foreign direct investments, and the high export potential motivate firms to enter the list. As a result of these motivations, firms increase the production values. Because the other meaning of firms being included in the list is to be among the top 500 enterprises in terms of production. This is important for both the firms and the countries.

DISCUSSION

The study analyzes the factors that motivate firms to enter the list of 500 large industrial enterprises for the years 1993-2021 in terms of sector-specific variables and macroeconomic indicators. In this context, a market entry model is constructed and six sub-sectors, namely the manufacture of food, beverages, and tobacco products; the manufacture of textiles, wearing apparel, and leather products; the manufacture of chemical, petroleum, coal, rubber, and plastic products; the manufacture of other non-metallic mineral products; the manufacture of basic metals; and the manufacture of fabricated metal products, are taken into consideration.

The findings indicate that sector-specific variables play a more significant motivating role for firms. Specifically, an increase in the number of employees, stronger equity, higher level of labor productivity, and the growth potential of the market have positive effects on firms. Conversely, increasing scale of the market acts as a barrier to entry. Furthermore, it is observed that public R&D support encourages firms. Additionally, foreign direct investments in each sector are viewed positively by firms and serve as a motivation to boost their sales from production. Policymakers should continue to prioritize investment in research and development, providing resources and incentives to encourage innovation. Additionally, creating an environment conducive to attracting foreign investments can stimulate economic growth and competitiveness.

The most notable result pertains to the economic freedom index. While this value signifies the rule of law, it exerts a negative impact on the outcomes. In other words, the full implementation of the law suprisingly affects firms in the opposite direction rather than motivating them. Governments should consider this aspect in their policies and this can be accepted as a call for further investigation to understand the underlying factors driving this relationship.

With a general evaluation, it should be summarized that despite the significance of macroeconomic indicators, sector-specific variables play a much more substantial role in motivating firms to enter the list. This underlines the importance of tailoring policies to specific industries and sectors. In addition to these, by addressing these macroeconomic factors through effective policy measures, Turkey can create an environment that is conducive to market entry, sustainable economic growth, and international competitiveness. It is important to monitor these factors closely and adapt policies as needed to respond to changing economic conditions. The adverse effect of the 2001 crisis on all firms should also be highlighted. This can be accepted a reminder of the vulnerability of businesses to economic downturns and the need for robust crisis preparedness measures to foster resilience within the manufacturing sector.

Overall, the findings highlight the complex interplay of various factors influencing firms' decisions to enter the market. This calls for a nuanced and targeted approach to policy-making, with a particular focus on sector-specific considerations and the potential impact of economic freedom and legal environments on market entry. These findings are important because firms' increased motivation leads them to increase their sales from production in order to enter the list. This means an increase in the country's production. In addition, it should be emphasized that the firms with the potential to enter the list are large-scale firms and represent the international competitive power of the country. As the motivation of firms increases, the production of high-value-added products will increase as well. Therefore, governments should identify the factors that motivate firms, especially through macroeconomic indicators, and intervene where necessary.

BIBLIOGRAPHY

Akay, E. Ç. (2015), "Panel Nitel Tercih Modelleri", (Ed.Selahattin Güriş), Stata ile Panel Veri Modelleri, İstanbul: Der Yayınları: 175-192.

Austin, J. & Rosenbaum, D. (1990), The Determinants of Entry and Exit Rates into U.S. Manufacturing Industries. Review of Industrial Organization, 5(2): 211-223.

Bain, J. S. (1951). Relation of Profit Rate to Industry Concentration: American Manufacturing, 1936-1940. The Quarterly Journal of Economics, 293-324. https://doi.org/10.2307/1882217.

Cala, C. D. (2018), Sectoral and regional determinants of firm Dynamics in developing countries: evidence for low-, mediumand high-tech manufacturing in Argentina. CEPAL Review, 124: 121-141.

Ediz, Y. & Önder, K. (2019). İçecek İmalatı Sektörünün Piyasa Yapısı ve Yoğunlaşma Düzeyi: Türkiye'nin İlk 1000 Sanayi Kuruluşu Üzerine Bir Uygulama. Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, 60, 25-40.

Genchev, E. (2015), Determinants of Entry and Exit Rates in Australian Industry. B&M Publishing, San Francisco, California, USA, 45-57.

Günal, G.G. (2018). Türk Bankacılık Sektörünün Değişen Yapısı: 2001 Öncesi ve Sonrası Dönemlerin Karşılaştırmalı Analizi (Doktora tezi), Erişim Adresi: https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=nvVEkNTEBQgwYGMckam7 LA&no=_GTeG3ZM_s5DSWJl7jvQ1A.

Günal, G.G & Deliktaş, E. (2020), Yüksek ve Düşük Teknolojili Sektörlerde Piyasaya Girişin Belirleyicileri. Eskişehir Osmangazi Üniversitesi İktisadi ve İdari Bilimler Dergisi, 15 (1), 249-266. DOI: 10.17153/oguiibf.511611

Günalp, B. & Cilasun, S. M. (2002). Türk İmalat Endüstrilerinde Piyasaya Giriş Davranışı. Ege Academic Review, 2(2), 43-53. Retrieved from https://dergipark.org.tr/tr/pub/eab/issue/39833/472253

Günalp, B. & Cilasun, S.M. (2006), Determinants of Entry in Turkish Manufacturing Industries. Small Business Economics, Springer, 27(2): 275-287.

ISO (2022), Türkiye'nin 500 Büyük Sanayi Kuruluşu 2021. Promat Basım Yayın Sanayi Ve Ticaret A.Ş, İstanbul.

İzgi, B. B & Dineri, E. (2014), Determinants of Market Entry: A Study on Turkish Manufacturing Industry (1996- 2001 Period). Folıa Oeconomıca, 6(309): 7-14

Cornwall, J. (1977). Modern Capitalism, Its Growth and Transformation, New York: St

Kaya, S. & Üçdogruk, Y. (2002), The dynamics of entry and exit in turkish manufacturing industry, ERC Working Papers 0202, ERC - Economic Research Center, Orta Doğu Teknik Üniversitesi

Kaynak, S. (2016). Giyim Eşyası İmalatı Piyasa Yapısı ve Yoğunlaşma Oranı: Türkiye'nin İlk 500 Sanayi Kuruluşu Üzerine Bir Uygulama. Uluslararası Yönetim İktisat ve İşletme Dergisi, 12(30), 21-37.

Orr, D. (1974), The Determinants of Entry: A Sudy of the Canadian Manufacturing Industries. The Review of Economics and Statistics, MIT Press, 56(1): 58-66.

Öztürk, E.K. (2010), Finansal Başarısızlık Tahmin Metodlarının Karşılaştırılması ve Sektörel Bir Uygu-lama, İstanbul: Marmara Üniversitesi Sosyal Bilimler Enstitüsü.

Öztürk, S. & Kılıç, D. (2012), Patterns and Determinants of Entry and Exit in Turkish Manufacturing Industries, International Journal of Arts and Commerce, 1(5): 107-118.

Roh, Y. (2018), Determinants of Firm Entry and Exit in Canada and the U.S, Yüksek Lisans tezi, Ottova Üniversitesi, 4457395.

Rosenbaum, D. (1993), "Profit, entry and changes in concentration", International Journal of Industrial Organization, 11(2): 185-203.

Turanlı, S. & Kılıç, D. (2009), Determinants of Firm Exit in Turkish Manufacturing Industries, 6th ENEF Meeting, Paris.

Ukav, İ. ve Emeksiz, F. (2017). Gıda Sanayi Ürünlerinin Piyasa Yapıları. ADYÜTAYAM, 5(1), 42-54.

Yılmaz, Y. (2020). Türkiye'nin En Büyük Sanayi Kuruluşlarının Etkinliklerinin Değerlendirmesi: Kimya Sanayi. Ünye İktisadi ve İdari Bilimler Fakültesi Dergisi, 3 (2) , 22-29 . Retrieved from https://dergipark.org.tr/tr/pub/uiibfd/issue/58413/801575

https://www.heritage.org/

tuik.gov.tr

https://data.worldbank.org/

https://www.iso500.org.tr/

Annex 1: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Employment	174	11.03	0.58	9.56	11.96
Profit	174	18.61	6.23	0	24.55
Productivity	174	22.17	2.13	15.32	25.13
Equity	174	18.61	6.23	0	24.55
Pgrowth	174	0.43	0.49	-0.38	2.91
Scale	174	23.23	2.14	17.46	27.02
Concentration	174	0.32	014	0.11	0.66
Demand	174	1.41	0.31	0.75	1.98
Growth	174	3.25	4.56	-7.13	10.51
P_R&D	174	17.76	4.10	50.6	65.40
Pr_R&D	174	18.96	2.38	13.60	22.12
Efi	174	6.89	1.52	0	9.91
Export	174	17.91	2.29	12.33	20.26
Fdi	174	19.12	2.24	13.60	22.12
y	174	0.51	0.50	0	1

Source: Authors' calculation

Annex 2: Correlation Matrix

Variables	Employment	Profit	Equity	Pgrowth	Scale	Concentration	Demand	Growth	Efi	Export	Fdi	P_R&D	Pr_R&D	y	Value Added	Assets	Performance	Inflation
Employment	1																	
Profit	-0.1192	1																
Equity	0.0128	0.5096	1															
Pgrowth	0.0604	-0.2706	-0.5586	1														
Scale	0.1289	0.4842	0.5673	-0.6637	1													
Concentration	-0.1722	0.1384	-0.0091	0.1142	0.0397	1												
Demand	0.045	-0.196	-0.4938	0.2453	-0.5158	0.0237	1											
Growth	0.0211	0.2757	0.1678	0.0748	0.161	-0.0212	-0.056	1										
Efi	-0.052	0.1359	0.3015	-0.1269	0.3846	-0.0328	-0.1513	-0.093	1									
Export	0.1648	0.0272	0.1691	-0.122	0.2487	-0.3238	-0.1956	0.0568	0.1847	1								
Fdi	-0.0953	0.2475	0.447	-0.3733	0.4451	0.1556	-0.1008	0.0575	0.1293	0.3951	1							
P_R&D	-0.0541	0.4593	0.5601	-0.7424	0.5369	-0.1047	-0.4788	0.1398	0.4239	0.2174	0.4114	1						
Pr_R&D	-0.0556	0.4237	0.5558	-0.7185	0.5395	-0.0985	-0.5311	0.1121	0.4385	0.2274	0.3869	0.9779	1					
y	0.1789	0.0283	0.0639	0.1551	0.088	-0.0856	-0.0736	0.0535	-0.0264	0.0551	0.018	0.0444	0.0441	1				
Value Added	0.117	0.5071	0.9479	-0.6652	0.9599	0.1423	-0.4759	0.1693	0.2896	0.2691	0.5694	0.8896	0.8902	0.0761	1			
Assets	0.0826	0.4666	0.9853	-0.7133	0.9906	0.0048	-0.5179	0.1513	0.3634	0.2178	0.4445	0.9612	0.9641	0.0808	0.9569	1		
Performance	-0.0286	0.8357	0.1249	0.0575	0.1133	0.1239	-0.0731	0.0705	0.0461	-0.0721	0.1236	0.031	0.0254	0.017	0.1608	0.074	1	
Inflation	0.0369	-0.3873	-0.8086	0.645	-0.7637	0.0882	0.3331	-0.2286	-0.1577	-0.1412	-0.4089	-0.8248	-0.7777	-0.0345	-0.7447	-0.794	0.0658	1

Source: Authors' calculation.