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InTraders topics; international trade, business, economics and supply chain management.

In upcoming next issue, waiting your studies.

Wish to meet you all in this new international conferences…

Kürşat ÇAPRAZ

Director of InTraders Academic Platform

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Dollarization’s Effects In Turkey Economy

Muhammed Ali Celaleddin Önen¹
Yurdagül Meral²

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Abstract

In order to preserve the value of assets in high-inflation countries, investors turn to currencies of economically stable and secure countries. Once liberalization measures were taken in the 1980s in Turkey, the volume of foreign exchange entering its economy also increased. However, high inflation, low domestic investment, increased volume of imports and weak financial base left the Turkish economy with the reality of dollarization. In this study, the definition of dollarization and currency substitution is explained in details. The aim of this study is to describe the difficulties Turkey faced with dollarization from the very beginning up to a certain period in chronological order. This study involves that by means of considering of time-series comparative analysis data method and investigating the facts that constitute the reasons for dollarization were associated to the by causality method. The expected result in this study is that high inflation and uncertainties in both the political and economic environment can lead to a high dollarization of the economy.

Keywords: Dollarization, Currency Substitution, Dollarization, Turkey

JEL Codes: B21 E31 E42 E50

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InTraders International Trade Academic Journal Vol.4 Iss.2 e-ISSN-2667-4408
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Dolarizasyonun Türkiye Ekonomisine Etkileri

Özet


Anahtar Kelimeler: Dolarizasyon, Para İkamesi, Dolarizasyon ve Türkiye

JEL Kodu: B21 E31 E42 E50
Introduction

With the process of globalization, many countries have had to experience the struggle with economic crises. The harsh criticism of the policies implemented in this process led to the emergence of new searches. Various suggestions have been put forward in order to regulate the financial structure and to alleviate the effects of the experienced global or regional crises. The most interesting of these is the fact that countries legally adopt the currency of the developing country by partially or totally giving up their national currencies. Intensive debates began on the implementation of this recommendation, known as currency substitution or dollarization, as a policy in many countries. Although dollarization is generally thought to occur as a result of high and unstable inflation, it is also affected by macroeconomic variables such as exchange rate changes, real Gross Domestic Products (GDP), money supplies and interest rates. In the 1990s, Turkey experienced periodic inflation exceeding 100%, and the income balance and macroeconomic stability in the country were severely damaged. For this reason, there were frequent changes of government and coalitions in the country in the 1990s. Later came the economic crisis of 2001. With the Strong Economy Transition Program announced on April 15, 2001, the Central Bank of the Republic of Turkey (CBRT) gained full autonomy to reduce inflation in the country and the CBRT was assigned as its primary area of responsibility. The task of “maintaining price stability” was given. Afterwards, Central Bank of the Republic of Turkey (CBRT) aimed to the inflation targeting regime from 2002 and carry out the implicit inflation targeting framework in the period of 2002-2005, and the explicit inflation targeting framework was aimed in the period of 2006 and on looking years. In 2018, inflation increased rapidly in Turkey due to internal and external reasons, and the inflation targeted by the CBRT as 7% in January 2018 was in the Government Program but at the end of the year inflation rate was 20.30% in terms of Consumer Prices (CPI) and in Producer Prices Index (PPI) at the end of 2018 was declared as 33.64%. This situation shows that inflation is on the way to become an important macroeconomic problem again in Turkey and has increased the need for academic studies and policy recommendations on the causes and prevention of inflation. It can be stated that there is a close interaction between inflation and interest rates in Turkey; the direction of the interaction is not from interest to inflation, but from inflation to interest [48]. For example, dollarization is a problem observed in Latin American countries such as Peru, Argentina and Venezuela, which are experiencing severe inflation (See Table A.1); Nigeria, Tunisia, Kenya in Africa (See Table A.2);
In Asia, Cambodia, Pakistan, Malaysia (see Table A.3). It is a phenomenon that can be seen in countries such as Romania, Estonia and Russia in Europe (see Table A.4). Flexible exchange rate system and financial freedom increase the demand for foreign currency as well as the official currency of the countries. This increase in the demand for foreign currency is seen as an increase in foreign currency financial assets and foreign currency deposits. Increase in financial assets increase in the tax base is both positive and negative the size of the currency substitution. In short, dollarization is the unit of account of the national currency, exchange functions and substitution of savings by foreign currencies. It can come from demand and time deposits in foreign currency and in terms of various financial assets [51].

Table A. 1 Selected Latin American Countries’ Inflation Rates

<table>
<thead>
<tr>
<th>Years</th>
<th>Argentina</th>
<th>Peru</th>
<th>Venezuela</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>No Data</td>
<td>4,4</td>
<td>180,9</td>
</tr>
<tr>
<td>2016</td>
<td>No Data</td>
<td>3,2</td>
<td>274,4</td>
</tr>
<tr>
<td>2017</td>
<td>24,8</td>
<td>1,4</td>
<td>862,6</td>
</tr>
<tr>
<td>2018</td>
<td>47,6</td>
<td>2,2</td>
<td>130060,2</td>
</tr>
<tr>
<td>2019</td>
<td>53,8</td>
<td>1,9</td>
<td>9585,5</td>
</tr>
<tr>
<td>2020</td>
<td>36,1</td>
<td>2</td>
<td>2959,8</td>
</tr>
<tr>
<td>2021</td>
<td>No Data</td>
<td>3,2</td>
<td>2700</td>
</tr>
</tbody>
</table>

3 [19]
Table A. 2 Selected African Countries' Inflation Rates

<table>
<thead>
<tr>
<th>Years</th>
<th>Kenya</th>
<th>Nigeria</th>
<th>Tunisia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>6,6</td>
<td>9</td>
<td>4,4</td>
</tr>
<tr>
<td>2016</td>
<td>6,3</td>
<td>15,7</td>
<td>3,6</td>
</tr>
<tr>
<td>2017</td>
<td>8</td>
<td>16,5</td>
<td>5,3</td>
</tr>
<tr>
<td>2018</td>
<td>4,7</td>
<td>12,1</td>
<td>7,3</td>
</tr>
<tr>
<td>2019</td>
<td>5,2</td>
<td>11,4</td>
<td>6,7</td>
</tr>
<tr>
<td>2020</td>
<td>5,2</td>
<td>13,2</td>
<td>5,6</td>
</tr>
<tr>
<td>2021</td>
<td>6</td>
<td>16,9</td>
<td>5,7</td>
</tr>
</tbody>
</table>

Table A. 3 Selected Asian Countries' Inflation Rates

<table>
<thead>
<tr>
<th>Years</th>
<th>Cambodia</th>
<th>Malaysia</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>1,2</td>
<td>2,1</td>
<td>4,5</td>
</tr>
<tr>
<td>2016</td>
<td>3</td>
<td>2,1</td>
<td>2,9</td>
</tr>
<tr>
<td>2017</td>
<td>2,9</td>
<td>3,8</td>
<td>4,1</td>
</tr>
<tr>
<td>2018</td>
<td>2,4</td>
<td>1</td>
<td>3,9</td>
</tr>
<tr>
<td>2019</td>
<td>2</td>
<td>0,7</td>
<td>6,7</td>
</tr>
<tr>
<td>2020</td>
<td>2,9</td>
<td>-1,1</td>
<td>10,7</td>
</tr>
<tr>
<td>2021</td>
<td>2,5</td>
<td>2,5</td>
<td>8,9</td>
</tr>
</tbody>
</table>

Table A. 4 Selected European Countries' Inflation Rates

<table>
<thead>
<tr>
<th>Years</th>
<th>Estonia</th>
<th>Romania</th>
<th>Russian Federation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0,1</td>
<td>-0,6</td>
<td>15,5</td>
</tr>
<tr>
<td>2016</td>
<td>0,8</td>
<td>-1,6</td>
<td>7</td>
</tr>
<tr>
<td>2017</td>
<td>3,7</td>
<td>1,3</td>
<td>3,7</td>
</tr>
<tr>
<td>2018</td>
<td>3,4</td>
<td>4,6</td>
<td>2,9</td>
</tr>
<tr>
<td>2019</td>
<td>2,3</td>
<td>3,8</td>
<td>4,5</td>
</tr>
<tr>
<td>2020</td>
<td>-0,6</td>
<td>2,6</td>
<td>3,4</td>
</tr>
</tbody>
</table>

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[20]
[21]
[22]
In the most basic sense, dollarization is the ability of a foreign currency to fulfill all the functions of money in a country, instead of the national official currency. Dollarization is also defined as currency substitution, as a foreign currency is preferred more in functions of being a unit of account, storing value and intermediating transactions, compared to the official currency. However, even though currency substitution and dollarization are two concepts that are generally used in the same sense, dollarization occurs as a result of the loss of the functions of domestic currency as a value storage and unit of account, while currency substitution is the fulfillment of all functions of money by foreign currency [6].

The aim of this study is to describe the difficulties Turkey faced with dollarization from the very beginning up to a certain period in chronological order. Also, when Turkey economy is faced seriously a dollarization effect is the another aim of this study.

This study is organized as follows: Section 1 represent theoretical framework of dollarization and currency substitutions words’ definitions. Section 2 demonstrates the literature reviews which of related studies about dollarization in the Turkey economy. Section 3 gives information under chronological order about dollarization and Turkish economic structure by using tables and figures to develop comprehension. Last part in section 4 concludes in a detailed and coherent way to have better view on readers’ minds.

**Conceptual Framework**
Dollarization

Dollarization is a term used to describe activities performed by households or organizations in response to economic uncertainty and excessive changes in prices. It pertains to the acts carried out by people or organizations to find appropriate means to achieve money and asset substitution. Money substitution makes reference to the usage of a foreign exchange to protect one's own money against highly inflationary depreciation. The United State's currency is the most widely used currency all around the world. To be deemed an elevated dollarized economy, the percentage of global money oriented funds in the economic system must be at minimum 20 percent of gross funds accordance with the World Bank [41].

Economic officials in nations fronting elevated inflation which is associated with increases outgrowth purchase dollars to defend their backs from declines in the valuation of their domestic properties. Dollarization is the term for this operation. Many studies have shown clear reciprocal causal relationships between inflation and foreign currency price [23] [31]. The exchange rate pass through is the jointly enduring impact of that rising price level changes drives up currency's value level deflation, that then contributes to rising inflation. This is especially valid in comparatively small or emerging open markets where deterioration of the national exchange raises the cost of manufactured commodities and worsens the rising inflation phase. Dollarization refers to the practice of venture capitalists and families keeping and purchasing dollars in order to keep the worth of their investments stable throughout the presence of greater rising prices. The rising request for dollars among agencies puts uphill stress on currency values, causing strong domestic currency downturns. We must understand additional possible issues in dollarized markets, including the effect of major fluctuations in global exchange prices on funding costs and financial institution's currency inequalities. Financial institutions commonly fund both dollars and national currency in dollarized markets. If households had dollar-denominated debt and their income is in domestic currency, and the domestic currency suddenly depreciated, household dollar-denominated monthly bills would increase significantly. Throughout most circumstances, these large changes, along with the fact that the country's money denominated income has not increased at the equivalent rate, indicate that there will be late in bills, effectively putting one in default. In a dollarized financial industry there is a strong link among inflation and the ratio of global money lending to domestic money lending, as [34] and [30] draw attention to. They state in their studies that the banking industry prefers to lend in international currency during
inflationary periods, but debtors want to get into debt in national currency (that means lack of credit validity). Even banking institutions that extend dollar loans in the hope of offsetting the risks of their cash holdings should incur an additional type of risk (unrealized credit stress) as described above. i.e., banking institutions just turn one degree of stress (currency rate stress) into the other (non-performed loans stress) without reducing their risks or offsetting their stances. As a result, heavily dollarized countries’ economies are more exposed to sharp currency price changes than non- or mildly dollarized countries’ economies. Furthermore, the use (purchase) of sound (stable) international money, including the US dollar, is the only financial tool available to buffer international currency value stresses at this time. In countries with chronic high inflation problems, the foreign currency first functions as a value storage or unit of account, then it is used as a medium of exchange. However, as the amount of foreign currency in circulation is not known exactly, dollarization rates are accepted as an indicator of currency substitution. For this reason, it is common to use dollarization and currency substitution as concepts interchangeably. Dollarization is classified differently according to the dimensions in which it is experienced. In addition to the foreign currency, the national currency is still in force, partially or unofficially (de facto) dollarization. The main reason for this is a rational indicator of economic agents' loss of confidence in the national currency. Officially, with the removal of the domestic currency from circulation, the situation where a foreign currency fulfills all the functions of the national currency is called full or official dollarization. Panama and Ecuador official dollarization, Argentina, Mexico and Peru are among the countries experiencing partial dollarization. Private sector and public borrowing in foreign currency in developing countries is expressed as liability dollarization. This situation both makes the country market fragile and makes the management of macro variables difficult [33].

The realization of the return and production costs of firms that export final goods or use imported intermediate goods in the production of final goods in foreign currency is known as official dollarization [26]. Currency substitution also varies according to its size. The situation in which residents and nonresidents demand national and foreign currency at the same time is symmetric currency substitution. Asymmetric currency substitution, on the other hand, is the situation where the foreign currency units demand low demand for the currency of the other country, despite the intense foreign currency demand of the residents [32]. Money substitution is also defined with narrow and broad meanings. According to the narrow definition, currency substitution means the
substitution of foreign currency with national currency; in broad definition, it means the substitution of all external financial assets with the national currency. According to another approach, currency substitution is explained directly and indirectly. Direct currency substitution is defined as the competition of two or more currencies that can be used as a payment instrument in the same market, while indirect currency substitution is defined as investors turning to foreign financial instruments instead of domestic financial instruments [27]. In Turkey, where the demand for dollars increases day by day while saving owners create portfolios or invest, it also causes an increase in dollarization. While the economic and political instability initially undermines confidence in TL, it makes the cost of holding dollar assets and financial instruments advantageous. Because the rational individual wants to use channels in which he feels safe to obtain benefits and save for the future [51]. Countries experiencing dollarization process have to use external resources since they do not create sufficient resources for their financial development [35]. Individuals want to protect the economic value of savings and take advantage of the opportunities created by the volatility of macro variables by resorting to foreign resources. In this respect, dollarization is observed to be reflected in the balance sheets of economic units in two ways. First is the asset dollarization, which includes foreign currency and foreign currency assets included in the assets of economic agents' balance sheets, and secondly; liability dollarization, which refers to foreign currency liabilities in the liabilities part of their balance sheets. Financial dollarization includes both asset and liability dollarization [51].

Currency Substitution

A certain proportion of use the terms Currency Substitution (CS) or dollarization to characterize the capital exit in a national economy [1], another authorities that illustrate the parallel (black) business exchange rate's dynamics [11]. Majority of authorities want to draw alertness to the common use of foreign exchange as a store of cash, unit of account, and medium of trade in the economy that occurs in domestic market [32] [28] [36]. While the word "dollarization" was being used to identify the CS operation in previous paragraphs, particularly it is most often used to point out that a foreign exchange operates as a unit of account or a store of value rather than a medium of exchange. An individual has to know that foreign currency is initially considered as a store of value or a means of payment in inflation elevated countries - just as these are the first two issues that the national currency loses in the context of elevated inflation, and then as a medium
of trade. Consequently, currency substitution is always the last step in the dollarization cycle [25].

Due to the uncontrolled nature of foreign currency holdings the dollarization cycle generally begins with foreign exchange operating as a store of value in place of the national currency. Since domestic currency is the most unpredictable of the three principal suppliers of revenue. Except for a few expenditures on housing, cars and other "big ticket" products, all expenditures by the individual are priced in foreign currency depending on the inputs in the production process, which continues to increase inflation. With the result that for this to occur inflation must not be excessively high or unstable. From the other hand, country's currency prefers to be used as a unit of account and a means of trade for almost all not long lasting commodities [10]. In the empirical literature, evaluating CS or dollarization is difficult since measuring the phenomenon requires a clear description of what is destined to exist to dollarization and conclusive data that nearly match that definition. Unless dollarization is described as a mechanism for that a foreign exchange takes over any or all of the processes of a national currency, the optimal remedy will entail all foreign exchange accounts kept by national citizens, along with foreign exchange bills, foreign exchange reserves in the national banking mechanism and foreign exchange reserves held beyond the bounds of a country [25].

If dollarization is narrowly explained as the method in which the national exchange is moved from its usual place as a medium of trade by a foreign exchange (as described in the concept of CS), the optimal approach will eliminate from consideration of all interest conveyor holdings and foreign exchange assets. As a consequent, the most prevalent approach in methodological studies is to use variables of dollarization as currency replacement variables, the most common of that is the portion of FEDs (Federal Reserve Bank) in the national banking mechanism in the wide extend of the total amount of money including of FEDs [25].

**Literature Review**

**Dollarization and Inflation**

The effect of dollarization in Turkey's inflation dynamics is investigated in this paper. According to descriptive research, structural factors played a significant role in the evolution of dollarization in Turkey, in addition to high inflation and economic uncertainty. The empirical results back up the duty of dollarization in inflation framework. The findings indicate that initial concussion to
dollarization result in decrease in the unit of currency as people shift their capital holdings from domestic to international. For a given budget deficit, the unit of currency from the other hand, increases sooner to generate the necessary inflation tax. The findings also show that the fiscal governing body is seeking to make up for some of the lost inflation tax income by boosting ruled rates. The rate of exchange reacts positively to dollarization shocks due to the large elasticity of replacement between internal and external exchange, as expected by Bahmani-Oskooee and Domaç (2003). The Vector Autoregressive Model (VAR) was applied as an empirical structure in Yilmaz and Uysal (2019)’s paper that looked at the link among dollarization and inflation in Turkey. The dollarization rate explains 0.63 percent of a 1 percent change in the consumer price index in the tenth period, according to the results of the disintegration of the variation. Inflation accounts for 5.32 percent of the 1 percent rise in the dollarization rate in that corresponding time frame. The Johansen Cointegration Test was used to analyze the connection among the parameters however no long time period link was discovered. Dollarization percentage is a determinant of consumer price index at a meaningful threshold of 10 percent in accordance with the Granger Causality studies. In the post-liberalization stage, this thesis aims to quantify the impact of dollarization on consumer price index, internal output, and private funding in Turkey. Karacal (2005) analyzed the short time and long time period connections among those parameters, as well as their durability, utilizing data for the monthly time period from 1987 to 2004 and an autoregressive distributed lags (ARDL) methodology. Dollarization had a significant influence on consumer price index however mainly a short-term effect on internal production and little influence on private funding, according to the findings. As a result, it suggests that, in the face of dollarization, monetary easing fiscal measures that are matched by monetary regulation might only raise internal output in the short time period of time, and merely at the cost of extended inflation, which might stifle economic growth.

Sever (2012)’s research used the Granger causality method to analyze the association among currency level volatility and dollarization level in Turkey for the time frame 1989:12–2010:12 and the sub-time period 2001:02–2010:12. The connection between dollarization and fluctuations in exchange rates is greater. Dollarization causes exchange rate volatility just after sixth lag. Besides that, also for time duration starting from 2001:02 to 2010:12, when a stable exchange rate regime was introduced, just one causative association between dollarization and exchange rate volatility was discovered. Meng Sui, Erick W. Rengifo and Eduardo Court
(2021)’s paper provides a thorough analytical investigation into gold's arbitrage power toward unfavorable consumer prices and changes in exchange rates in three nations: Turkey, Peru, and the United States as a standard. They observe that gold can provide security toward currency fluctuations and consumer price index fluctuations for Turkey and the United States at any and all time periods using quantile-on-quantile regression (QQR) method and quantile-on-quantile correlation (QQCOR) models, but not throughout Turkey's highly inflationary era.

Dollarization is calculated by the proportional levels of returning of internal and international monetary unit transacted reserves, projected adjustment in the currency rate, exchange rate endanger and the legitimacy of existing government reforms about economy, according to Civcir (2003)'s paper advanced portfolio framework. The findings which are related with the econometrics are consistent with the model's insightful forecasts. The rate of interest difference and predicted currency values are the most important factors in assessing dollarization, according to author’s findings. In addition, the article illustrates the unwillingness of taking action in Turkey's dollarization phase. Kıvılcım Metin-Özcan and Vuslat Us (2009)'s study examines the origins of dollarization in Turkey ensuring by building metrics for wealth, responsibility, and overseas dollarization. The analysis is looking for the condition of two or more series are themselves non-stationary, but a linear relationship between these values. The findings indicate that wealth dollarization increased mostly as a consequence of increased appetite for international wealth prior to the 2001 financial collapse.

The aim of Uslu (2019) is to empirically analyze the interaction between inflation and interest rates in the 2002:M01-2019:M01 period, when the inflation targeting regime was implemented by the CBRT (Central Bank of the Republic of Turkey). Long-term analyzes were made using the ARDL method and it was determined that the inflation rate in Turkey increased by 0.25% with a 1% increase in commercial loan rates and by 0.05% with a 1% increase in deposit rates. On the other hand, it was observed that the 1% point increase in the inflation rate increased the commercial loan rates by 0.23% and the time deposit interest rates by 0.59%. Lastly, it was found that a 1% point increase in deposit interest rates increased commercial loan rates by 1.04%. In the short-term analysis, it has been determined that commercial loan rates increase inflation in the short term, and commercial loan rates are increased by inflation and time deposit rates.
Uslu (2018)’s work researched that the effects of interest rate and exchange rate on foreign trade in Turkey were investigated by time series analysis with structural break for the period 1989:M01-2018:M06. It has been observed that the increase in the interest rate decreases the exchange rate. In the short-term analysis; It has been determined that the increases in the exchange rate do not immediately affect the exports, but decrease the imports. It has been observed that increases in interest rates have a reducing effect on exchange rates in the short run. The causality relations between the series were examined with the Granger test and one-way causality relations from interest to exchange rate, from exchange rate to import, and two-way causality relations between interest and imports and between exports and imports were determined. This situation; It shows that the monetary policies implemented in Turkey can affect the exchange rate, and the exchange rate policies can affect imports.

**Dollarization and Turkey**

We can say that the dollarization process in Turkey started with the applications of Foreign Exchange Deposit Account with Convertible to Foreign Currency and Credit Letter in order to solve the foreign exchange problem that occurred after the oil crises in the 1970s. In accordance with the stabilization program implemented later, at the end of 1983, the barriers to commercial banks' transactions in foreign currency were removed and the way for residents to have foreign currency deposits was opened. We can say that since this period, foreign exchange deposit accounts have become an important part of the broadly defined money supply [39].

Within the framework of liberalization tendencies in exchange rate policies, especially after the partial exchange liberalization in 1984, with the increasing inflationary tendency in the domestic currency, the escapes from the national currency started to gain momentum and the foreign currency needed by the public became more attractive than the Turkish Lira (TL)-denominated return rates, indicates that interest policies are not independent from foreign exchange policies. While a parallelism was observed between domestic interest rates and exchange rates from 1985 to 1987, the direction of movement of exchange rates after 1987 was the opening of the interest rate shear. Following the speculative movements of the exchange rate-interest spread opened in February 1988, decisions were taken to impose some restrictions on foreign exchange movements, but these restrictions were short-term. It can be said that the annulment of the Law No. 32, which was enacted in order to ensure that domestic borrowing and foreign savings are
included in the national economy in the financing of public deficits that support the increase of instability in the economy, is one of the important factors contributing to the opening of the exchange rate-interest spread [31]. With the decision number 32 taken in August 1989, the infrastructure of liberalization in Turkey has been largely completed. It is observed that some arrangements were made in the period of a few months following this decision. With these regulations, all restrictions on capital movements have been lifted [40].

With this practice, the purpose of positive interest application is to make foreign capital inflows attractive on the one hand, and to reduce the currency substitution event on the other hand. However, under the inflationary environment and economic conditions with public imbalance, Turkey has become dependent on short term hot money flows. The continuation of such capitals in the country is possible by keeping the real interest rates high. While this situation causes an increase in the share of foreign savings in the public imbalance, it creates problems in the current account balance as a result of the overvalued national currency causing a decrease in exports and an increase in imports [31]. As a result, capital outflows, which started after the negative developments in the expectations in the economy, which became dependent on speculative capital movements due to the low exchange rate-high interest pincer, created crises. In this context, after the financial liberalization practices, the inflation difference between the developed economies and the developing economies as well as the economic and political uncertainties and the expectations that the national currency will depreciate also triggered the dollarization trend [2]. Liberal economic policies also support national and international firms to develop their domestic and foreign economic relations. In this context, while improvement occurs in the purchasing and commercial relations of national companies abroad, at the same time, the commercial relations of international companies with domestic companies increase in various ways. The fact that the development of international integration requires more money from countries accepted in international trade in the portfolios of both national and international companies encourages dollarization [40].

In the period 1986-88, the share of foreign deposits in total deposits increased from 15 percent to 27 percent. At the same time, the share of time deposits in total deposits decreased from 66 percent to 42 percent. The important point that draws attention here is the presence of an acidmetric trend in the share of time deposits and the shares of foreign exchange deposits. This
may show that economic units move from time deposits to foreign currency or that the relationship between these two variables is in the opposite direction [14]. With the opening of the financial system in 1989, the cost of transactions in foreign currency decreased. Since this period, although the yields of foreign exchange deposit accounts are lower than assets linked to TL, currency dollarization has continued due to the unstable environment in the country [29]. After the capital account liberalization in August 1989, significant capital inflows occurred, which increased the real value of the national currency. While the real exchange rates decreased by 26 percent in the said period, the inflation rate decreased from 75 percent to 60 percent [14]. The 1990 is the period in which the Turkish economy was under the influence of intense capital flows accompanied by weak macroeconomic fundamentals, institutions and regulations. During this period, policies focused on different priorities rather than stability, structural reforms were not made and a loose fiscal policy was implemented. The monetary policy of the Central Bank can be summarized as adapting to this process and postponing a possible crisis as much as possible. As a result, inflation has reached the level of 80 percent, and the public borrowing requirement has increased to 15 percent of the gross national product. This structure has made the economy extremely vulnerable to external shocks in an environment where capital movements are free [39]. While the ratio of foreign exchange deposit accounts (FX deposits) to the broad money supply (M2Y) was 23 percent in 1990, this ratio increased to 42 percent in 1993 (See Table A.1).

On the other hand, evaluating the share of foreign exchange assets in total deposits as the determinant of dollarization may cause us to misinterpret the dollar rate. Because, although the yield rates of TL assets continued to be higher than those of foreign currency assets in these years, the shares of foreign currency deposits continued to increase. With the introduction of alternative investment instruments such as treasury bills and repo in the financial reform process, new investment instruments have become more preferred by households. While individuals prefer repo with more returns to time deposits, banks have tried to balance their portfolios with treasury bills [14].

If we look the Turkish economy history's overall in terms of exchange rate and interest rates, while Turkey applied a production and economic growth model based on import substitution, which was largely closed to the outside in the pre-1980 period, it adopted an export-based, open-ended economic growth model with the January 24, 1980 Decisions. Within the scope of the
foreign exchange regime applied previously, individuals are prohibited from holding and using foreign currency, while foreign currency transactions of companies are subject to the permission of the Central Bank, while the "Turkish Currency Exchange" No. 32 dated 11.08.1989. With the “Decision on Protecting Its Value”, the use of foreign currency was released and international capital movements towards the country were made free [37]. In Turkey, where the fixed exchange rate regime was dominant since the early 1930s, when the Central Bank was established, the Turkish Lira, which was first tied to currencies such as Frank and Sterling, was tied to the US Dollar in the Bretton-Woods system that started in 1944. After a short fluctuation after the Bretton-Woods implementation that ended in 1971, a managed floating exchange rate regime has been applied since the 1980s. A fastening process has been experience [4]. Exchange rates are one of the most important agenda items of the economy in every period in Turkey, which implemented a controlled floating exchange rate (floating exchange rate in the broadband) regime, following the fixed exchange rate regime (also called narrow band floating rate) tried between January 1, 2000 - February 21, 2001 [16] [24]. On the other hand, interest is the most important monetary policy instrument of the Central Bank of the Republic of Turkey (CBRT), especially after 25 April 2001, when the CBRT was made fully independent and its primary goal was to ensure price stability (preventing high inflation, reducing it). It has becomes more important for the Turkish economy. In periods when the need for foreign exchange in the country increases and the demand for foreign currency rises, the CBRT tries to attract more foreign financial capital to the country by increasing the funding rates of the banks. The most recent example of this happened in 2018, and the CBRT overnight lending rate, which was 9.25% in May 2018, was increased to 16.50% on 1 June 2018 and 19.25% on 8 June 2018 in order to curb the rising exchange rate. Not seeing this as enough, the CBRT increased the late liquidity window lending rates, which it used to lend to banks after 16:00, to 20.75% on 8 June 2018 [47].

On 14 September 2018, the interest rate increased to 24.00% with an increase of 6.25%. The irregularity of foreign exchange prices in the Turkish economy, which has an unstable movement in interest rates, has caused a great pressure. In the period between 2019 and May 2020, interest rates gradually decreased. The interest rate, which went down to 8.25%, decreased risk appetite together with the COVID-19 pandemic, which affected developing economies on a large scale, and the decrease in incomes, which are described as hot money coming out of the economies, prompted the policy makers of the Turkish economy to increase the interest rates again. With the
interest rate of 19.00 on March 19, 2021, the serious depreciation of the Turkish Lira, especially in the last quarter of 2021, and the outflow of foreign investors in the country's economy, an unconventional action has been taken and a trend towards lowering the interest rates has begun to be followed. As of January 2022, the interest rate is hovering around 14.00% and the signals that it will decrease further have been given decisively by the policy makers.

If we look at the Turkish economy’s exchange rate policies, in the 1980-1989 period, the fixed exchange rate system with frequent devaluations, the controlled free exchange system in the 1989-1999 period, and the fixed exchange rate system in which daily increases were determined in the 2000-2001 period were applied. From the second half of 2001 to the present, a free exchange rate system, in which CBRT interventions are limited, has been implemented. It can be said that in the 1980-2001 period, when exchange rates were used as a means of gaining advantage in foreign trade, the implementation of the export-based growth model started in real terms after 2001 [7]. It can be said that the exchange rate policies implemented on the Turkish economy have significant effects and that it is also an important reason for the economic crises experienced. The fact that the Turkish economy has faced crises at more frequent intervals since the 1990s is closely associated with the exchange rate policies implemented in this period experienced a financial crisis and TL was devalued by 120% against the dollar [8]. Although a significant increase was observed in the level of exports in 1994, due to the growth and spending policies followed in 1995 and the following years, the domestic demand increased significantly and the import rate increased as a result of the real appreciation of the TL [9]. With the effect of a series of financial crises experienced by the world economy between 1998-2001, Turkey went through turbulent periods in 1998-1999, 2001 and 2008-2009. In 1999, a special monetary and exchange rate policy was determined within the framework of the stand-by agreement. This system can be defined as a crawling pag system that works on the basis of a coin board. The optimistic atmosphere, which continued until the middle of 2000, in the economy and financial markets in general, showed a sudden deterioration at the end of the year. After the financial crises in November 2000 and then February 2001, the program based on the mobile anchor was abandoned [46]. With the policy implemented after the 2001 crisis, the exchange rates were left to fluctuate and a new program aiming at a permanent and sustainable improvement in macroeconomic indicators was put into practice.
### Table A. 5 Dollarization Rates and Foreign Exchange Rates of Change

<table>
<thead>
<tr>
<th>YEARS</th>
<th>FEDA/M2Y</th>
<th>FD/GNP</th>
<th>FCB/TDD</th>
<th>$/TL RATE OF CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>0.24</td>
<td>0.26</td>
<td>-</td>
<td>0.274</td>
</tr>
<tr>
<td>1990</td>
<td>0.23</td>
<td>0.27</td>
<td>-</td>
<td>0.266</td>
</tr>
<tr>
<td>1991</td>
<td>0.31</td>
<td>0.28</td>
<td>-</td>
<td>0.733</td>
</tr>
<tr>
<td>1992</td>
<td>0.34</td>
<td>0.29</td>
<td>-</td>
<td>0.685</td>
</tr>
<tr>
<td>1993</td>
<td>0.42</td>
<td>0.30</td>
<td>-</td>
<td>0.689</td>
</tr>
<tr>
<td>1994</td>
<td>0.48</td>
<td>0.45</td>
<td>-</td>
<td>1.657</td>
</tr>
<tr>
<td>1995</td>
<td>0.43</td>
<td>0.38</td>
<td>-</td>
<td>0.593</td>
</tr>
<tr>
<td>1996</td>
<td>0.45</td>
<td>0.37</td>
<td>-</td>
<td>0.760</td>
</tr>
<tr>
<td>1997</td>
<td>0.46</td>
<td>0.36</td>
<td>-</td>
<td>0.904</td>
</tr>
<tr>
<td>1998</td>
<td>0.47</td>
<td>0.41</td>
<td>0.07</td>
<td>0.530</td>
</tr>
<tr>
<td>1999</td>
<td>0.43</td>
<td>0.47</td>
<td>0.05</td>
<td>0.727</td>
</tr>
<tr>
<td>2000</td>
<td>0.47</td>
<td>0.50</td>
<td>0.08</td>
<td>0.243</td>
</tr>
<tr>
<td>2001</td>
<td>0.52</td>
<td>0.71</td>
<td>0.30</td>
<td>1.142</td>
</tr>
<tr>
<td>2002</td>
<td>0.55</td>
<td>0.63</td>
<td>0.28</td>
<td>0.135</td>
</tr>
<tr>
<td>2003</td>
<td>0.50</td>
<td>0.55</td>
<td>0.19</td>
<td>-0.146</td>
</tr>
<tr>
<td>2004</td>
<td>0.41</td>
<td>0.46</td>
<td>0.16</td>
<td>-0.038</td>
</tr>
<tr>
<td>2005</td>
<td>0.36</td>
<td>0.41</td>
<td>0.15</td>
<td>0.006</td>
</tr>
<tr>
<td>2006</td>
<td>0.33</td>
<td>0.44</td>
<td>0.12</td>
<td>0.052</td>
</tr>
<tr>
<td>2007</td>
<td>0.34</td>
<td>0.42</td>
<td>0.09</td>
<td>-0.175</td>
</tr>
<tr>
<td>2008</td>
<td>0.32</td>
<td>0.46</td>
<td>0.07</td>
<td>0.298</td>
</tr>
<tr>
<td>2009</td>
<td>0.31</td>
<td>0.53</td>
<td>0.04</td>
<td>-0.004</td>
</tr>
<tr>
<td>2010</td>
<td>0.29</td>
<td>0.45</td>
<td>0.03</td>
<td>0.026</td>
</tr>
</tbody>
</table>

\[40]
Figure A.1 shows that Turkey’s foreign exchange has been steadily rising throughout the timeframe, with a higher upward acceleration in the previous five years. Also it’s important noting that gold has had a nearly 1:1 connection with domestic money and foreign exchange over the previous five years [41].

If we look at the Figure A.1, Figure A.2 and Figure A.3 altogether Turkey experienced a fairly stable inflation rate, especially between 2002 and 2018. However, after the asymmetric exchange rate attacks that shocked the markets in 2018, rising inflation rates became inevitable for the Turkish economy, whose economic activity is highly dependent on the dollar exchange rate. While all these are happening, the gold price chart in the free market follows an upward trend. It is very difficult to say the correct ratio of inflation and dollar rate movements to each other for the ounce price of gold. We cannot say that the upward movement in gold prices, inflation and dollar rate levels are directly affected by this upward movement. While the price index on the consumer side was flat, and the low pricing in the dollar supporting this, of course, the downward trend in prices throughout the country must have created an opportunity for gold investors, as the high demand for gold caused gold prices to be priced upwards.

Figure A. 1 1 Ons gold London selling prices years between 1996 and 2021

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8 [13]
Domestic households were permitted to setup foreign exchange bank deposits in January 1984 as part of a stimulus policy aimed at reforming the financial market. The poorly developed financial industry and elevated consumer prices levels prompted an increase in global currency savings in

Figure A. 2 Consumer price index level in Turkey years between 1996 and 2021

Figure A. 3 Foreign exchange rate levels in Turkey years between 1996 and 2021

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9 [42]
10 [12]
the banking industry when Turkey concluded its capital account globalization in 1989 by allowing absolute quality of a currency of being exchangeable for other currencies of the TL and removing caps on external capital movements (See Figure A.4) [41]. Global money units especially the Deutsch Mark (DM) have long been present in Turkish households' group of investments. The DM has become a near alternative for the TL, particularly between non-urban areas' populations with descendants who have been overseas since the late 1960 time periods, due to the growing presence of Turkish employees, primarily in Germany. This, nevertheless, cannot be considered money substitution in and of itself. While there is no accurate evidence on the amount of international money owned by the general population as a means of trade, it is fair to say that they were insignificant before international currency restrictions were abolished. Prior to the financial service's modernization, no international exchange was commonly used as a unit of account in internal trades. As a result, the trend of dollarization (or markization) in the Turkish market began in the mid-1980s [38].

If we look at the rate of foreign exchange deposits in the broad money (see Figure A.4 and Figure A.5), we can see that the upward trend has progressed aggressively after 1985 until the 1997 Asian financial crisis. The money supply, which increased with the effect of the crisis, decreased the share of foreign exchange, but with the effect of the recovery, we see a relatively flat rate in the short term until the 2001-2002 banking crisis. The 2001 Turkish crisis dealt a heavy blow to the economy by breaking the record of foreign currency demand in the last 25 years. The political and economic stability achieved with the balancing of inflation after 2002 also reduced the domestic demand for foreign currency. The stability, which was preserved until 2015, was interrupted by the manipulative movements organized by external forces and did not allow the normal functioning of the economic wheels. With the coup attempt that took place in 2016, the currency attacks in 2018 and the pandemic that broke out in 2020, the demand for foreign currency in the country increased, and this caused an inflationary atmosphere.
Another of the remarkable aspects of the 1980s is the incapacity to develop the fixed gross capital creation essential to maintain the first export expansion of the decade. The key causes for the

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11 [25]
12 [6] [42]
incapacity to produce a large generating of funding growth may be considered to be the macroeconomic uncertainty and excessive loan prices of the period. The development of economic and social facilities structure was the primary emphasis of the public funding plan. During the period 1990-1994, the transportation and telecommunications industry accounted for 37.6 percent of all public expenditures which was 15 percent greater than the mean between 1980 and 1984. The state's engagement in the production business has steadily diminished, for example, the production business's proportion of overall total fixed expenditures in the public area has reduced from 19.4% in 1980-1984 to 7.9% in 1985-1989 and 4.3 percent in 1990-1994 (See Figure A.6) [25]. Nevertheless, private industry expenditure could not offset the reduced rates of state expenditure that might be related to excessive source activation prices and the availability of vacant productivity at the start of 1980. Starting from 32.7 percent in 1980-1984 to 21.6 percent in 1985-1989 and 24.8 percent in 1990-1994, the production business's proportion of private sector expenditures fell to 21.6 percent in 1985-1989 and 24.8 percent in 1990-1994. Private sector expenditure in the residential industry on the other hand, grew significantly from a mean of 29.6 percent in 1981-1983 to a mean of 40.2 percent in 1994-1996 (refer to Figure A.6). Nonetheless, overall private expenditure as a proportion of Gross Domestic Products (GDP) has remained stagnant throughout the previous two decades with 13.3% in 1980, 15.8 percent in 1990, 16.1% in 1999, and 17 percent in 2000 (see Figure A.4) [25]. While examining the private investments made in the sectors, the volumes of the industry and construction sectors, which are actually two of the dynamo sectors of the Turkish economy, are the main indicators that should be taken into account when examining the Turkish economy. When we look at Figure A.7, the value added volumes of the industry and construction sectors in the country from 1971 to 2002 do not even reach 100 billion Turkish Liras, and this allows us to make observations about the limited economic activity in the country. Figure A.3, Figure A.4 and Figure A.5 allow us to have an interpretation of the rate of demand for foreign currency within the country. The less the demand for foreign currency in the country, the more positively the volume of economic activity will be affected. The price stability achieved especially after 2002 and the low demand for foreign currency also positively affected the volume of investments in the country. The sector volume of 100 billion TL, which could not be reached in the 30 years from 1971 to 2002, reached 200 billion TL in a short period of 5 years between 2003 and 2008. In the history of the country, another record was broken in the economic frame.
As seen in Figure A.8, after the economic crisis in 1994, there was a significant increase in the ratio of foreign borrowing from foreign currency to gross domestic product and the ratio of foreign exchange (FX) deposit account to large money supply (M2Y). It has not lived and has become permanent. It is possible to express that the foreign exchange deposit account rates did

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13 [25]  
14 [42]
not decrease in the 1990s as a reflection of the measures taken by the economic units against the exchange rate risk in an environment of instability. While foreign currency borrowings were negligible until the end of the 1990s, there has been a significant increase in the level of foreign exchange or foreign exchange indexed domestic borrowing since 2000 [18]. Turkey, which was exposed to many global and national economic fluctuations until 2002, became one of the countries that experienced the rapid transition to a stable economic structure. When we look at Figure A.8, the frequent fluctuations experienced between 1986 and 2000 indicate that it is difficult to achieve economic stability. Especially when we look at the framework from the point of view of depositors, the tendency towards foreign currency has increased during the economic crises and the bottleneck processes and this tendency has become an irresistible reflex. In order to reverse the tendency towards the demand for foreign currency, a solid financial structure should be established and the country's economy should catch the positive trend in terms of macroeconomics. When we consider all these, the period when all the conditions listed were met after 2002. First of all, extreme fluctuations were replaced by a stable trend, which increased the confidence felt in the economy for depositors. We see that the tendency towards foreign currency deposits has decreased with the establishment of increasing confidence in the economy. Balanced inflation data, together with the positive pricing on the consumer and producer side, and the effect of the low exchange rate, FX deposits became the decreasing side when we compare them with the money supply and M2. However, especially after 2018, increasing inflation and speculative exchange rate attacks once again increased the tendency towards foreign currency. Since an increase was achieved in the M2 wing with the increasing inflation, there was no significant increase in the Foreign currency deposits (FCD)/M2 ratio, but the primary reason for the increase in the FCD/Total TL Deposits ratio is the increasing exchange rate and the increase in domestic demand for foreign currency (See Figure A.9).
Figure A. 8 Proportion of Foreign Currency Deposits and Money Supply Proportion of Foreign Currency Deposits and Total TL Deposits\textsuperscript{15}

Figure A. 9 Proportion of Foreign Currency Deposits and Money Supply Proportion of Foreign Currency Deposits and Total TL Deposit\textsuperscript{16}

\textsuperscript{15} [18]

\textsuperscript{16} [6] [42]
In Figure A.10, as dollarization indicators, the ratio of FX deposit accounts to the broad money supply \( \text{Foreign Exchange Deposit Account (FEDA) / M2Y} \), the ratio of FX domestic borrowing to the total domestic borrowing amount \( \text{FCB / TDD} \) and the ratio of external borrowing to gross domestic product \( \text{Foreign Debt (FD) / Gross National Products (GNP)} \) offered. Besides, the percent change values in the United States Dollar (USD) / TL exchange rate are also shown on Figure A.10 [18].

Following the confidence environment created by the economic program implemented after the 2001 crisis in Turkey, significant decreases are observed in both asset and liability dollarization. Foreign currency borrowing rate at the end of 2010 dropped to the level of 15 percent. While the ratio of foreign exchange deposits to the broad-based money supply was 55 percent in 2002, this ratio decreased to 29 percent in 2010. On the other hand, the fact that the ratio of the average

\[ \text{S/TL RATE OF CHANGE} \]

Figure A. 10 Dollarization Rates and Foreign Exchange Rates of Change\(^{17}\)

\(^{17}\) [40]
foreign exchange deposit account to the money supply for the last four years is above 30 percent can be interpreted as an indication of the economic agents' belief that the economy will exhibit vulnerability in the face of shocks [40].

To summarize, while the dollarization process in Turkey displayed an upward trend between 1989 and 2001, it was observed that there was a decrease in the rate of dollarization after 2001. In the uncertainty environment caused by the crisis environment in 1994 and 2001 caused the increase in the level of dollarization. With the decrease in inflationary pressure within the framework of the economic program implemented successfully after 2001, there was a significant decrease in the rate of dollarization. However, one of the most important factors of the lower than expected reversal rate in the dollarization process after the crisis is the free exchange rate policy implementation and the tendency of economic agents to protect themselves against various risks [40]. On the other hand, an increase and a decrease occur in the rate of change of the exchange rate depending on internal and external factors in the economy. In line with the program announced in 1980, exchange rate policies were aimed to liberalize the balance of payments and exchange rate system, together with the creation of a realistic real exchange rate. In this respect, as in other pricing, the value of exchange rates is generally shaped as the reflection of prices formed in market conditions. Although it is widely accepted that the applied exchange rate policies are governed by passive or relative purchasing power parity rule, it would be more appropriate to say that they are actually in the form of a policy of continuous real effective value losses. From the end of 1979 until the end of 1988, TL depreciated by 55 percent in real effective terms and there was an erosion in real effective exchange rates at an annual average rate of 6.11 percent [3]. The exchange rate policies implemented from 1994 to 1999 are in the form of a free exchange rate system managed to prevent uncertainty in the markets. In lieu of this, efforts were made to move the exchange rates according to inflation expectations and to adopt interbank interest rates as reference interest rates in the markets [25].

Findings

While the total foreign currency deposits of real and legal persons in Turkey approached 190 billion dollars, the lower limit of dollarization (FEDA / M2) reached critical levels such as 0.47%. It is undeniable that variables such as Central Bank independence, speculative exchange rate, interest rates, country risk premium (CDS), credit rating grades, as well as price stability,
play a role in the loss of confidence in the national currency. In this sense, the first thing to do is reallocate trust in the national currency. Otherwise, it is almost impossible to prevent foreign currency demand without meeting the expectations of the economic agents and without providing legal security [51].

In times of high inflation, economic agents can increase their demand for foreign currency and financial assets in order to maintain their purchasing power. However, the devaluation of the national currency in countries where this situation is intense brings the problem of dollarization. Political tensions and election processes, deterioration in international relations, financial fragility and macroeconomic cause instability in Turkey, which has been a problem of inflation for years, lead to an increase in volatility in exchange rates. Ultimately, this situation increases the exchange rate, that is, it decreases the value of the TL against foreign country currencies. Individuals with reduced purchasing power rationally protect themselves by keeping their money in foreign currency, causing an increase in dollarization. As the foreign exchange deposits in hand increase, the success of the policies implemented is interrupted, eventually the monetary policy loses its effective functioning [51]. Taking all things into account, in order to fix the Turkish economy, it must first maintain its political stability and at the same time take steps to reduce inflation. The first step in reducing inflation is to ensure that FX deposit accounts are converted into TL deposits. While performing this step, new systems should be established to enable depositors to convert their money into TL, protecting them from heavy taxes and speculative currency attacks. Thus, depositors who feel safe from the exchange rate volatility and imposed taxes will have no reason to keep their money in FX deposits. These policies should be expanded step by step, and all institutions from legal entities to companies, which have foreign exchange affiliates, should be encouraged to keep their money in TL under state guarantee. In this way, increasing inflation will be prevented and the amount of dollarization will decrease to a large extent.
References


[12] CBRT EVDS Data Central, Central Bank of The Republic of The Turkey, Exchange Rates-Banknotes(Daily)

[13] CBRT EVDS Data Central, Central Bank of The Republic of Turkey. 1 Ons Gold London Selling Price (USD/Ons)


[42] The World Bank, The World Bank Group, from Data Bank World Development Indicators “Broad Money (current LCU)”:


[44] The World Bank, The World Bank Group, from Data Bank World Development Indicators “Industry (including construction), value added”:


ABBREVIATION LIST

ARDL: Autoregressive Distributed Lags

CBRT: Central Bank of the Republic of Turkey

CDS: Credit Default Swap

CPI: Consumer Price Index

DM: Deutsch Mark

FCB: Foreign Currency Borrowing

FCD: Foreign Currency Debt

FED: Federal Reserve Bank

FEDA: Foreign Exchange Deposit Account

FX: Foreign Exchange

GNP: Gross National Product

M2: Money Supply

PPI: Producer Prices Index

QQCOR: Quantile-on-Quantile Correlation

QQR: Quantile-On-Quantile Regression

TTD: Total Domestic Debt

TL: Turkish Lira

USD: United States Dollar

VAR: Vector Autoregressive Model
Make-or-Buy Decision Criteria in Pakistan Pharmaceutical Industry; a case of Albert Pharmaceutical Industry

Mahnoor Fatima

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Abstract

The goal of this research is to look into how Pakistan Pharmaceutical industries took make o buy decision. The “Make-or-buy” decision is an important choice in an organization. This decision can affect costs, competencies, and capability in the organization. The data has been collected from specialists of Albert manufacturing company in Pakistan. The questionnaire has been distributed to seven decision-makers of the Albert Pharmaceutical industry. Albert Pharmaceutical Industry mostly follows the decision-making criteria for core activities because it is a government requirement that all documents related to the manufacture and testing of medicines shall be submitted to Pakistan's Drug Regulatory Authority (DRAP). Because these are life-saving drugs, the government must take all precautionary measures. We have observed the relationship among the Resource-Based View, Cost Reduction, Environmental Uncertainty, and Financial Benefits, and the Decision-Making Criteria, on the other hand. The results of our study reveal that the Resource-Based View, cost reduction, and financial benefits are highly related to the decision-making criteria, whereas environmental uncertainty does not influence them at all. The outcomes of this study have also stated that making criteria is beneficial for the pharmaceutical industry. We also implement the regression analysis to see which factor has the greatest influence on the decision-making criteria, disclosing the Resource-Based View to be the most influential variable. Also, participants specify that they prefer manufacturing because they have most of the requisite resources and machinery along with human resources, organizational resources, and financial resources.

Keywords: Make-or-buy, resource-based view, decision-making criteria

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Introduction

Pakistan is a developing country and the Ministry of National Health Services legislation and Coordination is in full control of them. Pharmaceutical law is ruled through the Drug Regulatory Authority of Pakistan (DRAP), which ensures that the Drugs Act of 1976 is followed. The national essential medicine list (NEML) in Pakistan is primarily based on WHO standards and promotes standard medications; however, the whole report is generally only seen in public health centers (Rasheed et al., 2019).

The initiative of the Prime Minister’s Health Insurance Program to establish rules for manufacturing and strict penalties for drug-related law violations are just a few examples of how the government is critical to maintaining health insurance. Pakistan had no Pharmaceutical industry when it achieved independence. The only way of fulfilling people's medical needs is export which is a very expensive way. But now many national and international pharmaceutical industries are working in Pakistan (Dawood, 2012).

In the current business environment, it is critical for most pharmaceutical industries to address and concentrate to their overall corporate capabilities to obtain a higher advantage. This can help the organization achieve its desired organizational goals. In this regard, many pharmaceutical companies implement a strategy of concentrating on their core activities, which requires defining important functions and evaluating which could be made in-house or outsourced. Industries flip to conducting their operations themselves, consisting of human resources (HR), production, packing, warehousing, transportation, and substances planning, in the reaction of those permanently changing needs and increasing complexities (Bastani et al., 2019).

The well-known motivations of enforcing these operations can be categorized into three types: enhancing abilities, increasing profit, and reducing expenses. Core competencies, on the other hand, are the outcome of a combination of capabilities, routines, and firm-specific resources. A firm’s performance is uncertain as environmental conditions such as competition and market dynamics play significant roles.

The traditional nature of business operations requires the majority of economic activities are conducted inside the organization. However, with the evolution of markets and increased variety
of specialized decision-making criteria within these markets, the opportunity for outsourcing many non-core activities has grown significantly. An important phase in making in-house decisions or the process of outsourcing deals with the identification and assessment of potential risks.

The make-or-buy decision is one of the most crucial choices for any manufacturing organization. Typically, production corporations have loads of components, each of which may be made in-residence or outsourced. The outsourcing decisions are not best limited to substances and additives of a product but additionally apply to non-manufacturing support which includes assisting supply. For many businesses, the number of outsourcing choices is great. Besides cost and profit, outsourcing decisions additionally consider method issues, efficiency, and hazard dimensions associated with providing high-quality, lead times, and adequate transportation performance. If any of these elements are considered together, a procurement decision may be extremely complicated, having an impact on the firm’s profitability. Hence, a bad decision can lead to inadequate organizational effectiveness (Venkatesan, 1992; Welch & Nayak, 1992).

The make-or-buy choice is one of the toughest duties faced by industries. Therefore, it necessitates extensive knowledge to evaluate the types of trade-offs, to identify all the available resources, and to make a decision that balances the organization's brief and long-term objectives. Furthermore, as organizational standards and marketplace circumstances change, this choice might also need to be taken in a complete one-of-a-kind manner within the future (McIvor et al., 2014).

Within corporations, due to strategic implications, the choice to make or buy is being given special attention. The choice to make or buy can frequently be a primary determinant of profitability, making a significant improvement to the organization’s economic health (Yoon et al., 1994). Over the last few years, there is an increase in the number of organizations that outsource. The reason behind this trend refer to the risk related to a “make” approach, because of fast marketplace changes and the lack of pliability that characterizes in-house production (Hayes & Abernathy, 2007). Although, the trend to outsource parts that were previously manufactured in-house can result in an unexpected charges’ increase, with many businesses failing to integrate the make-or-buy choice into the overall manufacturing approach (Probert et al., 2002).
Consequently, making it a crucial business strategy in which the firm is most involved, organizations have usually sought approaches to acquire an aggressive advantage over their potential competition to serve the need to respond to marketplace changes; although the current quite aggressive environment in which today’s businesses operate acts as a robust stimulus for companies when choosing whether to outsource or not to outsource, an organization must understand several factors that may affect its performance by outsourcing.

Eventually, Albert pharmaceutical company, and also other top pharmaceutical companies in Pakistan have implemented manufacturing processes. This study seeks to bridge the gap through Resource-Based View, cost reduction, Environmental Uncertainty, Financial benefits Relationship with Decision-Making Criteria of Albert pharmaceutical company. Furthermore, this study will go thoroughly to identify how Albert Pharmaceutical followed the decision-making method and our main focus is to find if the decision, taken in the methodological terms of the company, is beneficial or not.

Literature Review

Various studies are available in the field of Make-or-Buy decision, of which all have mixed results. Most of the studies use a model for the determination of the suitability and cost-effectiveness of their decision. In this study, we highlight the way in which decisions are taken in Pakistan’s industrial sector.

Starting in the early seventies, purchasing from corporations was done primarily to obtain best prices, with other elements such as high quality and transportation being taken into consideration. Moreover, in so many circumstances, a substantial wide variety of elements along with transport reliability, technical capability, value functionality, and economic stability of the supplier had been now overlooked. Several businesses have implemented a competitive strategy regarding make-or-buy decisions, with many companies deciding to buy rather than make for short-term efficiency gains and company development (Ford et al., 2009).

Outsourcing has shifted its focus from peripheral activities such as cleanliness, serving, and security to more important business activities such as design, manufacturing, marketing, human resource management, and transportation (McIvor, 2000, 2009). When deciding whether to
outsourcing, it is important to consider financial issues, market issues, reliance, and the availability of employees and equipment (Damme & Amstel, 1996).

In practice, many firms have no method for evaluation in the process of decision making. According to Edward Davis, many corporations base their outsourcing on overhead costs. The choice of which additives to outsource is made by using ascertaining what’s going to store maximum overheads expenses, in preference to on what makes the most long-run businesses sensibility (Davis, 1992).

**Making Criteria**

“Make” is the approach which should be followed in order to preserve the manufacturing process in-house. On the contrary, if the corporation is presently outsourcing the production, then it could desire to internalize it eventually. It is additionally crucial to preserve any present-day benefit by further developing the competency in order to limit the danger of competition. Ideally, an organization desires to have aggressive benefits in as many of its center activities as feasible (McIvor et al., 2016).

Making-or-purchase cost evaluation means identifying the cost to procure an element and comparing that value to the expenses involved by the item’s purchase. The buying decision must be made whether all the costs associated with the buying decision, including transaction and coordination costs, are smaller than the production expense (Arya et al., 2008).

It is important to differentiate between the essential and semi-essential activities of the firm. It is also important to include a core activity to outline what is anticipated. Key interests are valuable to the corporation when it comes to correctly serving the desires of the capable customer in all marketplaces. The customer perceives the activity to be valuable, and thus it becomes a primary determinant of aggressive profit. Making the distinction between important activities and unessential activities is complex, and there should be ensured that long-term strategic issues and benefits are analyzed (McIvor et al., 2016).

Tayles and Drury (2001) stated that descriptive elements, as well as dishonest providers, the desire to govern production and quality of elements, as well as retain knowledge within the organization, will contribute to a decision. Other aspects include layout privacy, the ability to strengthen manufacturing, and workload pressure variability (Burt et al., 2010).

**Environmental Uncertainty**

Environmental uncertainty can be defined as a company’s inability to accurately determine the outcome in their selection (Wong et al., 2011). Environmental uncertainty typically has influences on the supply chain’s overall result and dictates which aggressive factor should be highlighted and reviewed to establish a prevailing aggressive approach (Premkumar et al., 2005).

To maintain a competitive advantage, a successful manufacturing firm must consider whether a proper supply chain strategy is required to align with distinct environmental uncertainty. Evaluating and monitoring an organization’s environment is critical for making correct choices and modifying techniques to a constantly changing context (Sun et al., 2009).

According to Anderson and Weitz (1986), environmental uncertainty has an adverse influence on both make or purchase choices. Certainly, creating and implementing policies to an external actor is difficult in an uncertain environment. Even so, wholly-owned corporations face similar challenges in coping with environmental uncertainty.

In this vein, corporations producing goods with rapid technological changes will gain from outsourcing, because they minimize the risk of never repaying their sunk costs as innovative technology emerges (Bartel et al., 2014).

**Resource-Based View**

The resource-based view (RBV) examines many aspects while considering threats and opportunities. From the resources point of view, a company creates the capabilities and competitive advantage for a specific business interest. RBV defines resources as physical and intellectual property inside the corporation. The useful resource-based view is entirely based on the concept of efficient resources (Barney, 1991).

In RBV, the company compares its available resources with those of its competitors and attempts to have a few more resources than the competitor, giving him an edge over the competitors (Neves et al., 2014). According to Barney (1991), a significant factor that affects producing
competitive benefits must be investigated based on the following criteria: price, desirability, rareness, and business enterprise. Moreover, the researcher believed that the corporation must be organized to maximize its resources and abilities.

The specialized technique is the basic function due to which a corporation gains the competitive edge. The techniques and other aspects that are not specialized can be outsourced. This summarizes that RBV is used to comprehend how the company’s capabilities expand and influence its rank and overall effectiveness (Eric et al., 2019).

**Financial Benefits**

During the last three years, numerous types of research have been conducted by researchers in addition to assessing the financial condition with the assistance of various profitability ratios by employing statistical analysis techniques. Business overall output analysis refers to the methods required to fully assess a firm’s capacity and obstacles using the connection between the heads of financial statements and the balance sheet (Panday, 1992).

The financial evaluation is defined as an investigation of causal relationships in terms of economic role and profit margins. The financial evaluation consists of three steps: Selecting, Relating and Evaluating financial records (Hingorani et al., 1973).

The major purpose of economic evaluation is to learn about the organization’s fiscal overall effectiveness and control function, as reflected within the economic statistics and reports (Hampton, 1986). Aside from fiscal evaluation, the selection of a location is also important within the powerful asset utilization and cost reduction topics (Schumacher & Sathaye, 1999).

**Cost Reduction**

Starting within the late 1970s and extending during the 1980s, most firms trusted conventional price reduction, which means that a group of crash applications concentrate on slicing prices via lowering payrolls and downsizing (Richardson, 1988). It is also surprising how firms can save sufficient resources to support additional expenses while still reaching the profit target and developing a feature for other organizations that might make that component (Akeem, 2017).

A conventional fee discount application is usually a distress tactic centered on employees. It is caused in reaction to an instantaneous danger, which includes poor performance, lack of
contracts, or price reductions. Some of those packages (mainly offshore retreat and diversification, both of which might be explained below) are booked with the desire of escaping to places wherein hard work and center fees are inexpensive. While those conventional techniques often lessen costs straight away, the associated reduction of the value of human belongings sets the level for the failure of abilities, in the long run, five regularly used traditional COSI Deduction programs are defined within the sections under their effectiveness (Skinner, 1989).

The phrases cost saving and value discount sound quite similar to a commonplace man, but their meanings are different. The cost-saving way to simply lessen the production fee by any means can be made through the use of raw cloth, with the aid of products, or even through wrong storage while applying price reduction without compromising the product quality. Cost reduction is decreasing the quantities of money spent on manufacturing and wages so that it will generate greater profit for the enterprise whilst preserving the quality of the product (Yadav et al., 2013).

Case Study

Most of the national industries are operating in Pakistan and their majority has chosen to outsource. The number of industries that carry on the whole manufacturing process in developing countries is small. In developed countries, research on Make and Buy is being conducted mostly by using a specific model for the determination of what decision is beneficial to their industry. Therefore, the primary goal of this research is to investigate the Making process of any Pakistan industry. So, we selected the Pharmaceutical industry as it plays a vital role in people's lifesaving and it is important for developing countries because the pharmaceutical industries in Pakistan own the manufacturing process. This is why we selected the Albert Pharmaceutical industry and collected data from the decision-maker and have knowledge about their decision-making choices and results.

Data and Methodology

Management is included in the decision-making process, given its responsibility of examining the criteria on which is based. This research reveals a case study approach; we assume that the management occupying senior positions within the pharmaceutical industry are more knowledgeable about the environment, strategies, and financial performance. Therefore, our
research is based upon primary data and secondary data, also known as the mixed method. The data was collected by questionnaire, given that an online survey was directed to an Albert pharmaceutical industry of Pakistan. The top executive of the Albert pharmaceutical industry was asked to respond to the survey, on the assumption that they have know-how regarding firms’ strategic issues. The survey guide concerning questions included Resource-Based View, cost reduction, Environmental Uncertainty, financial benefits that affect Decision-Making Criteria. In order to give an insight not only into the making of service-related activities (such as resources and accounting), Albert pharmaceutical industry was chosen as the sample for this study and also allowed us to scrutinize the dynamics of manufacturing.

The sample consists of 7 people, of which there are 6 males and 1 female. Data included 14.3% female respondents 85.7% male respondents. Moreover, the age of 85.7% of the total respondents ranged from 26-30 and the rest of 14.3% ranged from 30-40. All the respondents were post-graduated and their work experience in Albert pharmaceutical company ranged from 1 to 5 years (for 14.3%), 6 to 10 years (for 71.4%), and the rest of 14.3% of the total respondents’ experience was 10 years or above. The total data was collected from the top 7 executives of the Albert pharmaceutical industry.

The analysis of the data is based on a quantitative technique. The Structured Questionnaire is designed as a Tool for data collection. When the Questionnaire is adjusted, it is compulsory to measure the validity and quality of the questionnaires. However, the validity of this questionnaire has been approved by the concerned professional. The questionnaire is developed based on the Five-Step Likert Scale, which includes Strong disagree, Disagree, Neutral, Agree, and Strongly Agree, and a linear scale which includes very high to very low. We collected primary data through questionnaires and secondary data through previous research and data available on the internet. To begin with, the technique used for the sampling is non-random sampling in the cross-sectional time. The analysis of collected data is done through the software SPSS. The Study setting has been conducted in Natural Environment with Minimal Interference.

**Measures**

Within this research, we have concluded that the resource-based view, cost reduction, environmental uncertainty, financial benefits are independent variables, whereas the dependent
variables are the decision-making criteria of Albert pharmaceutical company. In order to keep the exploratory nature of this research, we elaborated detailed hypotheses and the decisions have not been examined before. Consequently, the hypotheses were tested to investigate the relationship between the independent and the dependent variables.

Decision-making criteria

Multiple conflicting criteria in the higher cognitive process are evaluated by a subdiscipline of research, expressly through multiple-criteria decision analysis. The stocks usually carry a high risk of losing cash that has the potential to transfer high returns, but managers propose to reduce the risks while recording high returns. By evaluating conflicting decision criteria which are typical because of price, quality simply increases in value. This analysis of make-or-buy demonstrates that the two-dimensional approach can be used in determining the make-or-buy decision. In industry, the price of providing services and client satisfaction are the basic conflicts in decision-making criteria. Significantly, the dynamic nature of analysis issues is captured through the planned methodology. The criteria are time-dependent and distinctive assumptions are made according to relative priorities by the model which only performs a time-dependent assessment of make-or-buy alternatives. In the proposed questionnaire submitted in Albert pharmaceutical industry, 11 items were designed to measure decision-making criteria. The respondents were asked to rate accordingly the impact of each criterion on a make-or-buy dilemma during the online survey by using a five-point Likert scale (1 for very low, 5 for very high). The value of Cronbach’s Alpha for these dimensions is .890.

Environmental uncertainty

Environmental uncertainties refer to the fact that firms affect chain performance as the future has unpredictable results under conditions of inaccurate choices. Sometimes environmental uncertainty determines the competitive factors in the market. Therefore, it should be evaluated and used as a winning competitive strategy. In unpredicted environments, writing and implementing contracts with external agents can cause trouble in the future. When investigating the decision-making criteria in changing environments, the sales fluctuations are very important to drive the pharmaceutical industry. Environmental uncertainty harms the production, purchase, and sales of products. This circumstances can force the management towards make-or-buy
decisions, the company being interested in minimizing sales fluctuations based on production in-house.

There were created five dimensions to test the environmental uncertainty. Each item was tested by using a five-point Likert-type scale, ranging from 1 “very low” to 5 “very high.” These dimensions are similar to those used by many developed to measure the following:

**H1.** There is a relationship between Environmental uncertainty and “making” criteria.

Opting for an in-house approach will grant higher profit by saving investments in some areas. However pharmaceutical industry can invest in required areas through in-house operations and these activities might perform by maintaining these variables. The pharmaceutical organization should pay attention to resource-based views (land, building, equipment, money etc.) and should also add a lot of facilities.

**Resource-Based View**

Five items were developed on a Likert scale from (1) “strongly disagree” to (5) “strongly agree” and individual responses were collected to measure the Resource-based review. Each individual was asked to indicate their view on the “making” decision criteria. Accurate data is collected from respondents. The value of Cronbach’s Alpha for these dimensions is .932. It was ensured that supported resources claim that we want to include capabilities and competencies in the analysis since they need an impression on the potency to govern the other structures. The square measures the complementary ability for innovation during making in-house. One assumes self-seeking as a basic characteristic of human behavior. The resources should be used properly. The selection of assets in the governance structure has, therefore, to be created cut back. On the other hand, the second perspective focuses on the matter of restricted knowledge of resources. It is usually not possible to transfer information to alternative persons. The hypothesis was developed to measure the following:

**H2.** There is a relationship between Resource-Based View and “making” criteria.

**Cost reduction**

The costs for the availability of production will have to be funded even in times when demand for the product is low and the facility might be underutilized. Essentially, making in-house
comprises the cost of manufacturing, profit margin, and internal resources. In Pharmaceutical Companies Cost reduction is done by a real and permanent reduction in the cost of products. They attempt to attain real savings in the price of distribution, administration, production, and commercialism. In the pharmaceutical industry, potential savings are buried; it is an attempt to excavate within the standards by planned efforts. The market lacks the dynamic approach however price management always needed standards intact of the variances. Cost management also seeks adherence and challenges in the price reduction standards. In pharmaceutical companies, the purpose of cost reduction is to check whether or not there's any chance of saving the prices incurred materials, labor, and factory overheads. Cost reduction begins wherever price management ends. Price management brings the actual harmonically change with the planned targets of making in-house.

A six-item construct was used to investigate assess cost reduction under making decision criteria. Each item was tested through a five-point of Likert-type scale (1) “strongly disagree” to (5) “strongly agree” The value of Cronbach’s Alpha for these dimensions is .877. The hypothesis was developed to measure the following:

**H3.** There is a relationship between cost reduction and “making” criteria.

**Financial benefits**

There are several ways pharmaceutical industries can get financial benefits by a greater focus and by increasing the availability of the drugs the greatest value can be attained. It can also be attained by Assets that produce more sellable product volume which operates longer between outages. The progressive volume made by additional reliable instrumentality carries a bigger margin of profit as a result of the fastened prices that were already unfolded across the baseline volume. Although the business isn't during a sold-out capability and therefore further volume isn't required, there are unit opportunities to create changes to operative shifts to cut back prices. When financial benefits are improved, maintenance prices are reduced often dramatically. Systems in pharmaceutical companies yield vital price reductions. Finally, to get financial benefits, assets area unit productive requires focus and our focus will yield higher high efficiencies. Funds might be deployed elsewhere for the nice of the business that may ordinarily be won't be replaced. However, in the pharmaceutical industry to create financial benefits focus
lead to modifications to the instrumentality to boost its reliability over the life of assets, and therefore newer instrumentality isn’t needed anymore

Five dimensions are developed critically and effectively to measure financial benefits. Each dimension was rated with the help of a five-point Likert-type scale (1) for “strongly disagree” to (5) “Strongly agree”. The value of Cronbach’s Alpha for these dimensions is 0.910. The hypothesis was developed to measure the following:

H4. There is a relationship between financial benefits and “making” criteria.

In the research, the poll for reliability test is created on SPSS for this study that inquiries both independent variables and dependent results. The reliability is tested on SPSS software under restrictions of thumb rule, the estimation of Cronbach’s alpha should be more than 70% which means 0.7. The value shows that the research of the data is reliable and satisfactory as the Cronbach’s alpha is 0.842. In this research, all five dimensions' reliability is based on Cronbach’s Alpha value that should be greater than 0.70. However, in the result of the reliability test, the amount of Cronbach’s Alpha of all the items is more than 0.70. So, the results have strong individual loadings on each dimension and show reliability and clarity in the conceptual structure.

Conceptual Model

<table>
<thead>
<tr>
<th>Resource Based View</th>
<th>Cost Reduction</th>
<th>Environment Uncertainty</th>
<th>Financial benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making Decision Criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Analysis/Results

We analyzed the above responses to identify if there is any relationship among Resource-Based View, cost reduction, Environmental Uncertainty, the financial benefits Handling on Making Decision Criteria the dimensions to represent the relationships among the dependent and independent variables.

In analysis, The One-Sample Kolmogorov-Smirnov Test was used to test the normality of dimensions. The thumb rule of normality analysis is if the level of significance a more than 0.05 then the data is normal and if the level of significance a less 0.05 than data is not normal. 05. The significance (2tailed) of Making Decision Criteria is 1.000 which is a>0.05. The significance (2tailed) of Environment Uncertainty is .803 which is a>0.05. The significance of (2tailed) Resource-Based View is .983 which is a>0.05. The significance (2tailed) of cost reduction is .905 which a>0.05. The significance (2tailed) of the financial benefits is .828 which is >0.05. Since the data is normal because the significance level of factors in data is greater than 0.05. The test results indicate that data is normal and the analysis is appropriate.

In our research, the model used for the correlation analysis computed the following information (principal components take values noted with double asterisk).
In H1 we failed to reject the null hypothesis, there is no relationship between Environment uncertainty, and making criteria.

In environment uncertainty, the Decision-maker may know the alternative that in which outcome it should be used but the condition of certainty always exists. The future is always unpredictable under the condition of uncertainty the cause and effect can occur on a daily routine. The day-to-day operations could be affected by environmental uncertainty but it does not affect making criteria. Under such conditions accurate and measurable and reliable information accordingly is available to the pharmaceutical industry. However, Environment uncertainty does not relate to making criteria and the variables do not have a relation with each other.

IN H2 we accept the alternate hypothesis as there is a highly significant relationship between the Resources based view and making criteria.

The setting should be introduced to bring innovation by using specialized potential and resources we already have in the pharmaceutical industry to compete with threats and rivalry in the market. However, it’s different to deal with or adopt new traits, functions, or skills it’s easier to use new

Table 1 *Correlation Table*

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Environment uncertainty</td>
<td>1</td>
<td>0.078</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Resource-based review</td>
<td>0.188</td>
<td>0.976*</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Cost reduction</td>
<td>0.139</td>
<td>0.975*</td>
<td>0.958</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Financial benefits</td>
<td>0.24</td>
<td>0.992**</td>
<td>0.974**</td>
<td>0.953**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Significant is at the 1% level of significance (2-tailed).

* Significant at the 5% level of significance (2-tailed).
opportunities competencies, and victimization resources, which we already have. Resources based view mode focus most on resources and supporters different structure strategy development.

In H3 we accept the alternate hypothesis as there is a highly significant relationship between cost reduction and making criteria.

A systematic examination of functions and assessment of the techniques is done for cost reduction. The various fields created investigation channels to test the performance improvement to increase the value of particular products and services to reduce cost and increase efficiency level through analysis pharmaceutical companies. However, it helps pharmaceutical companies to achieve cost for the greatest possible value. Hence, to analyze all aspects of an existing product/service for specific functional requirements should determine the minimum cost in Albert pharmaceutical company.

In hypothesis H4 we accept the alternate hypothesis as there is a highly significant relationship between financial benefits and making criteria.

The financial benefits lead to stability. Only the stability in operations in the industry can bring an increase in reliability and efficiency in performance which can bring financial benefits to the industry. The continuous method in pharmaceutical industries can realize not only the quality loss because of unstable operative excursions. This reduction in scrap prices and the stoppage of material wastes in the industry include financial benefits. The steadiness of the method should be reduced to reduce the speed. Instrumentality effectiveness, quality, availability and turnout performance can therefore reliability can also bring positive impact on all the factors of financial benefits.

Therefore, our correlation result shows that these factors financial benefits, Resource-based view and cost reduction have a highly significant positive relationship with “making” criteria.

**By implementing regression, we also find which factor has the greatest impact on the decision-making criteria:**

To investigate the effect of financial benefits we used the multiple linear regression analysis methods. The resource-based view and cost reduction, the effect three factors are analyzed. The
assumptions for multiple linear regression analysis (normality, linearity, and equality of variances) were fulfilled by data. There was no change in the dependent variable. The value of ANOVA was investigated in the model of making criteria. The model of ANOVA (identity of the population model summary) satisfied all the assumptions.

A post hoc analysis was done using Tukey’s range test and results identify that the differences test was significantly conducted. The value of regression is 0.000 which is less than the significant value of a<0.05. The adjusted r square value is .980 which shows a high impact of an independent variable on a dependent variable although, there is a significant impact of the Resource-based view on making criteria.

**Table 2**

*Regression Analysis*

<table>
<thead>
<tr>
<th>Making Decision Criteria</th>
<th>Coefficient</th>
<th>Sig Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource-Based View</td>
<td>.497</td>
<td>0.000</td>
</tr>
<tr>
<td>Financial Benefit</td>
<td>-.275</td>
<td>.412</td>
</tr>
<tr>
<td>Cost Reduction</td>
<td>.139</td>
<td>.654</td>
</tr>
<tr>
<td>Environment Uncertainty</td>
<td>-.275</td>
<td>.341</td>
</tr>
</tbody>
</table>

Regression analysis shows that Resource-based reviews have a high impact on the decision-making criteria. While taking the make and buy decision the resource-based view is the most important factor.

**Conclusions**

In a highly competitive market, organizations strive to prepare for future schemes that will assist them in enhancing organizational success. Such processes assist businesses in gaining a competitive edge. Pharmaceutical companies in the competing and challenging marketplace can lower costs by reducing the cost of practices. The results depict that in Pakistan most of the
pharmaceutical companies are using the Make in-house activity in business. The companies’ major motive behind making is cost-efficiency. The results of the correlation show that there is a significant influence of resource-based view, especially on cost reduction of companies. Cost is a prominent factor that has a significant impact on the company’s manufacturing under rule 1948 of Pakistan. The pharmaceutical industry also prefers making because they have all resources.

In the end, the results show that these financial benefits, Resource-based view, and cost reduction have a highly significant positive relationship with making criteria.

As the respondent also told that the core part includes all types of medicine that should be made by the Albert pharmaceutical industry. It is also a government requirement because a report of medicine which chemical and drug users and what are its effect should be submitted to the Drug Regulatory authority of Pakistan (DRAP). All medicine that is made required a specific temperature and environment that’s why the core part is also made. Non-core parts which are packing material, Logistics, bottles for syrup, and logo prints are outsourced. After the approval of the government, medicine should be made and sale to the consumer. Regression analysis shows that Resource-based review has a high impact on “making” criteria. As we conclude while taking the make and buy decision the resource-based view is an important factor. In light of the above fact, pharmaceutical companies give a positive impact of Resource-based review on decision-making criteria and Efficiency increases. In the end, the results concluded that due to several reasons as The Albert pharmaceutical industry prefers making criteria. ON their resources base they prefer to make because they have all resources needed for making medicine as well as it is cost-effective in Pakistan.

Limitations and future research direction

Our research is limited to the Albert Pharmaceutical industry due to shortage of time we have limited data for finding so all this research is according to one pharmaceutical industry. As a student or due to a pandemic we could not have approached other pharmaceutical industries. Another limitation is the sample size this research is also conducted by increasing the sample size. Future research can be done by increasing the number of pharmaceutical industries and any other industries.
References


İkili Ticari İlişkilerin İhracat ve İthalat Yoğunluk Endeksi ile İncelenmesi: Azerbaycan ve Kırgızistan Örneğinde (2010-2019)

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Alig BAGHİROV²

Başvuru: 3 Ocak 2022 Kabul: 10 Şubat 2022

Özet


Anahtar Kelimeler: İkili ticaret yoğunluğu, Azerbaycan ile Kırgızistan arasındaki ticari ilişkiler, İhracat yoğunluk endeksi, İthalat yoğunluk endeksi

JEL Kodu: B1, F1

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Investigation of Bilateral Trade Relations with Export and Import Intensity Index: In the Case of Azerbaijan and Kyrgyzstan (2010-2019)

Abstract

The main purpose of this study is to determine which level of bilateral trade relationships between two brotherly Turkish republics, Azerbaijan and Kyrgyzstan. In this study, an attempt was made to analyze the strength of bilateral trade relations between Azerbaijan and Kyrgyzstan, and the export and import intensity index was used to investigate the bilateral trade relationships of Azerbaijan with Kyrgyzstan between 2010-2019. Thus, the trade intensity between Azerbaijan and Kyrgyzstan was examined by means of the import and export intensity index, which is not less than the world average. Although the volume of exports and imports has generally decreased, as a result of the study, bilateral trade relations between Azerbaijan and Kyrgyzstan have been realized above the world average.

Keywords: Bilateral Trade Intensity, trade relation between Azerbaijan and Kyrgyzstan, Export intensity Index, Import intensity Index,

JEL Code: B1, F1
Giriş


Türk halkları ve ülkeleri arasındaki kültürel bağları genişletmek, halkların kültür ve sanatını korumak, canlandırmak ve geliştirmek amacını hedefleyen Azerbaycan ve Türkiye siyasi liderliğinin ve iradesinin gösterdiği faaliyetler sonucunda, 12 Temmuz 1993 tarihinde Azerbaycan, Kazakistan, Kırgızistan, Kıbrıs, Türkmenistan, Türkiye ve Özbekistan Kültür Bakanları 8 maddeden oluşan "Türksoy Yapısı ve Esasları Anlaşması"nı imzaladı ve uluslararası kültürel işbirliği örgütü olan TÜRKSOY kuruldu (Huseynova 2007: 12).


2. Literatür Taraması

Literatür çalışması yaparken ihracat yoğunluk endeksi ve ithalat yoğunluk endeksi ile yapılmış çalışmaları incelenecektir. Ulkeler arasındaki ikili ticaretin yoğunluğunu ölçen ithalat ve ihracat yoğunluk endeksi birçok uluslararası çalışmada kullanılmıştır. Literatürde çalışılacak iki indeks üzerinden yapılmış çalışmalar ve bu çalışmaların bu indeks ile yapılmıa nedenleri ve sonuçları gösterilecektir.


3. Metodoloji

Bu bölümde çalışmada kullanılan ihrac ve ithal yoğunluğu indekserinin teorik altyapısı sunulmaktadır. EII, bir ülkenin ortak ülke ile yaptığı ihracatın dünya ortalamasından daha yüksek olup olmadığını hesaplayarak endekstir. Bu endeks, ortalama olarak iki veya daha fazla ülke arasındaki ihracatın yoğunluğunu ve seviyesini ölçmek için kullanılmaktadır.
Çalışmada Azerbaycan ile Kırgızistan arasındaki ihracat yoğunluğunu ölçmek için ihracat yoğunluk endeksinin matematiksel tanımı aşağıdaki sunulmuştur (Altay vd. 2010: 3):

\[
EII_{ai} = \frac{(X_{ai} / X_{at})}{(M_{it} - M_{ia})/(M_{dt} - M_{at})}
\]

\(EII_{ai}\) - Azerbaycan ile Kırgızistan arasındaki ihracat yoğunluğu endeksi

\(X\) – Ihracat  
\(M\) - İthalat

\(X_{ai}\) - Azerbaycan’ın Kırgızistan’a ihracatı  
\(X_{at}\) - Azerbaycan’ın toplam ihracatı

\(M_{it}\) - Kırgızistan’ın toplam ithalatı  
\(M_{ia}\) - Kırgızistan’ın Azerbaycan’dan ithalatı

\(M_{dt}\) - Dünyanın toplam ithalatı  
\(M_{at}\) - Azerbaycan’ın toplam ithalatı

İhracat yoğunluk endeksinin değeri \(0 < EII\) arasında değişir. Eğer değer \(EII = 1\) ve ya \(1 \leq EII < 1\) yakın olarsa, Azerbaycan ile Kırgızistan arasında dünyayı ortalaması dengeli bir ihracat olduğu söylenebilir (Altay vd. 2010:3). Ihracat yoğunluk endeksi değeri \((EII > 1)\) l’den büyük olduğu durumunda “a” ülkesinin “i” ülkesine dünya ortalaması üzerinde bir ihracat gerçekleştirdiğini, yani Azerbaycan’ın Kırgızistan ile dünya ortalamasının üzerinde bir ihracat gerçekleştirdiği kânsına varılabılır. Endeks değerinin “1”den küçük olması halinde ise ihracat ilişkisinin dünya ortalamasına göre daha düşük olduğu söylenmektedir. (Anand vd. 2016: 26)

MII, bir ülkenin ortak ülke ile yaptığı ithalatın dünya ortalamasından yüksek olup olmadığını hesaplayan endekstir. Bu endeks, iki veya daha fazla ülke arasındaki ithalatın dünya ortalaması yoğunluğunu ve seviyesini ölçmek için kullanılmaktadır.

Azerbaycan ile Kırgızistan arasındaki ithalat yoğunluğunu ölçmek için ithalat yoğunluk endeksi şu şekilde tanımlanır:

\[
MII_{it} = \frac{(M_{ai} / M_{at})}{(X_{it} - X_{ia})/(X_{dt} - X_{it})}
\]

\(MII_{it}\) - Azerbaycan ve Kırgızistan arasındaki ithalat yoğunluğu endeksi

\(X\) – İhracat,  
\(M\) - İthalat

\(M_{ai}\) - Azerbaycan’ın Kırgızistan’dan ithalatı  
\(M_{at}\) - Azerbaycan’ın dünyadan ithalatı

\(X_{it}\) - Kırgızistanın toplam ihracatı  
\(X_{ji}\) - Kırgızistan’ın Azerbaycan’a ihracatı
İthalat yoğunluk endeks değeri 0 <MII arasinda gerçekleşir. Eğer bu değer EII = 1 veya 1’e yakın olarsa, Azerbaycan ve Kırgızistan arasında gerçekleşen ithalat dünya ortalamasında dengeli olduğunu gösterir. (Altay vd., 2010:3). Eğer İthalat yoğunlaşması indeksinin değeri (EII> 1) 1’den büyük olduğu durumunda “a” ülkesinin “i” ölkesinden dünya ortalaması üzerinde bir ithalat gerçekleştiğini, yani Azerbaycan’ın Kırgızistan’la dünya ortalamasını üzerinde bir ithalat gerçekleştiğini, endeks değerinin “1”den küçük olması halinde ise ithalın dünya ortalamasına göre daha az gerçekleştiği söylenmektedir (Anand vd. 2016: 26)

4. Azerbaycan- Kırgızistan Dış Ticaret İlişkilerine Genel Bakış

Bu bölümde Azerbaycan ile Kırgızistan arasındaki toplam ithalat, ihracat, ticaret hacmi ve denge incelenecektir. Grafikler ve analizler aracılığıyla iki ülke arasındaki mevcut durum ve fırsatların gelişimi gösterilecektir. 2019 yılında Azerbaycanın toplam ihracat ve ithalat haciminde yer alan ilk 10 ülkenin ve Kırgızistanın payını aşağıdaki grafikte yüzde olarak gösterilmiştir.

Grafik 1. Azerbaycan'ın ithalat ve ihracat payına göre ilk 10 ülke (%)


Grafik l’e göre 2019 yılında Azerbaycan’ın ihracat haciminde yer alan ilk 10 ülke: İtalya, Türkiye, İsrail, Hindistan, Almanya, Çin, Rusya Federasyonu, İspanya, Çekya ve Gürcistan olmuştur. Toplam ihracatta %29 ile İtalya liderlik etmektede, %14 ve %7 ile sırasıyla Türkiye ve İsrail ikinci ve üçüncü sıradadır. Kırgızistan Azerbaycan’ın toplam ihracat hacmi içerisinde %0,014 ile 54’çü sıradadır. Azerbaycan ithalat hacimine göre ilk 10 ülke ise Rusya...
Federasyonu, Türkiye, Çin, İsviçre, Amerika Birleşik Devletleri, Almanya, Ukrayna, İran İslam Cumhuriyeti, Kanada ve İtalya olmuştur. 2019 yılında Azerbaycan ithalatı; %17, %12 ve %10 olmakla sırası ile Rusya Federasyonu, Türkiye ve Çin’den gerçekleşmiştir. Kırgızistan’dan ithalat hacmi oldukça düşük %0,022 oranda olmakla, Azerbaycan’in ithalat sıralamasında 78’ci sıradada yer almıştır. İki ülke arasındaki dış ticaret hacmi oldukça zayıf olmaktadır. 2010-2019 yıllarında Azerbaycan ile Kırgızistan arasındaki ithalat ve ihracat hacmi aşağıdaki tabloda gösterilmektedir.

Tablo 1: Kırgızistan’ın Azerbaycan ticaret hacmi içinde sırası (2010-2019)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>İthalat</td>
<td>72</td>
<td>76</td>
<td>72</td>
<td>73</td>
<td>72</td>
<td>72</td>
<td>78</td>
<td>78</td>
<td>74</td>
<td>75</td>
</tr>
<tr>
<td>İhracat</td>
<td>33</td>
<td>36</td>
<td>38</td>
<td>41</td>
<td>40</td>
<td>42</td>
<td>46</td>
<td>60</td>
<td>49</td>
<td>51</td>
</tr>
</tbody>
</table>

Kaynak: [www.stat.gov.az](http://www.stat.gov.az), (Erişim Tarihi: 01.09.2020)


Tablo 2: Azerbaycan’ın Toplam Dış Ticaret Hacmi (milyon ABD $)

Kaynak: [www.trademap.org](http://www.trademap.org), (Erişim Tarihi: 01.09.2020)


Tablo 3: Azerbaycan’ın dış ticaretinde etkili olan ilk 10 ürün (Milyon ABD $)

<table>
<thead>
<tr>
<th>Kod</th>
<th>İhracat</th>
<th>Toplam (2010-2019)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tüm ürünler</td>
<td>197699419</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘27</td>
<td>Mineral yağlar, mineral yağlar ve bunların damıtılmasından elde edilen ürünler; bitümlü maddeler; mineral</td>
<td>182868900</td>
<td>92.50%</td>
</tr>
<tr>
<td>‘08</td>
<td>Yenilebilir meyve ve sert kabuklu yemişler; narenciye veya kavun kabuğu</td>
<td>2283863</td>
<td>1.16%</td>
</tr>
<tr>
<td>‘07</td>
<td>Yenilebilir sebzeler ve bazı kökler ve yumuralar</td>
<td>1260170</td>
<td>0.64%</td>
</tr>
<tr>
<td>‘39</td>
<td>Plastikler ve bunlardan esya</td>
<td>1206854</td>
<td>0.61%</td>
</tr>
<tr>
<td>‘76</td>
<td>Alüminyum ve alüminyumdan esya</td>
<td>822062</td>
<td>0.42%</td>
</tr>
<tr>
<td>‘29</td>
<td>Organik kimyasallar</td>
<td>512108</td>
<td>0.26%</td>
</tr>
<tr>
<td>‘52</td>
<td>Pamuk</td>
<td>468819</td>
<td>0.24%</td>
</tr>
<tr>
<td>‘71</td>
<td>Doğal veya kültür incileri, değerli veya yarı kıymetli taşlar, değerli metaller, kaplama metaller ...</td>
<td>453336</td>
<td>0.23%</td>
</tr>
<tr>
<td>‘72</td>
<td>Demir ve çelik</td>
<td>449339</td>
<td>0.23%</td>
</tr>
<tr>
<td>‘84</td>
<td>Makineler, mekanik cihazlar, nükleer reaktörler, kazanlar; parçaları</td>
<td>330290</td>
<td>0.17%</td>
</tr>
<tr>
<td>Diğer</td>
<td>7043678</td>
<td>3.56%</td>
<td></td>
</tr>
<tr>
<td>Kod</td>
<td>İthalat</td>
<td>Toplam (2010-2019)</td>
<td>%</td>
</tr>
<tr>
<td>Tüm ürünleri</td>
<td>97477557</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘84</td>
<td>Makineler, mekanik cihazlar, nükleer reaktörler, kazanlar; parçaları</td>
<td>17276065</td>
<td>17.72%</td>
</tr>
<tr>
<td>‘73</td>
<td>Demir veya çelikten esya</td>
<td>7668415</td>
<td>7.87%</td>
</tr>
<tr>
<td>‘85</td>
<td>Elektrikli makine ve teşhizat ve bunların parçaları; ses kaydediciler ve çoşaltıcılar, televizyon ...</td>
<td>7234428</td>
<td>7.42%</td>
</tr>
<tr>
<td>‘87</td>
<td>Demiryolu veya tramvay vagonları dışındaki araçlar ve bunların parça ve aksesuarları</td>
<td>6740507</td>
<td>6.91%</td>
</tr>
<tr>
<td>‘71</td>
<td>Doğal veya kültür incileri, değerli veya yarı kıymetli taşlar, değerli metaller, kaplama metaller ...</td>
<td>4338540</td>
<td>4.45%</td>
</tr>
<tr>
<td>‘72</td>
<td>Demir ve çelik</td>
<td>3573543</td>
<td>3.67%</td>
</tr>
<tr>
<td>‘10</td>
<td>Hububat</td>
<td>3417801</td>
<td>3.51%</td>
</tr>
<tr>
<td>‘27</td>
<td>Mineral yağlar, mineral yağlar ve bunların damıtılmasından elde edilen ürünler; bitümlü maddeler; mineral ...</td>
<td>3057341</td>
<td>3.14%</td>
</tr>
<tr>
<td>‘39</td>
<td>Plastikler ve bunlardan esya</td>
<td>2927955</td>
<td>3.00%</td>
</tr>
<tr>
<td>‘24</td>
<td>Tütün ve işlenmiş tütün ikameleri</td>
<td>2418838</td>
<td>2.48%</td>
</tr>
<tr>
<td>Diğer</td>
<td>38824124</td>
<td>39.83%</td>
<td></td>
</tr>
</tbody>
</table>

Kaynak: www.trademap.org, (Erişim Tarihi: 02.09.2020)

2010-2019 tarihleri arasında en çok ihraç edilen 10 ürün toplam ihraçın % 96,5’ini oluşturmuştur. Azerbaycan’ın toplam ihraçatının büyük kısmını petrol ve doğal gaz ürünleri oluşturmaktaydı nedeni ile bu ürünler ülke ekonomisinde önemli rol oynamakta ve mineral yağlar ve bunların damıtılmasından elde edilen ürünler, bitümlü ve mineral maddeler toplam ihraçatın %92,5’ini oluşturmuştur.
kapsamaktadır. 2010-2019 yılları arasında toplam 182.869 milyon $ değerinde petrol ve bitümlü minerallerden elde edilen yağlar, ham petrol, 10.392 milyon $ değerinde petrol gazı ve diğer gaz halindeki hidrokarbonlar, 9.191 milyon $ değerinde bitümlü minerallerden elde edilen petrol yağları ve sıvı yağlar (ham petrol hariç), 375 milyon $ değerinde elektrik enerjisi, 189 milyon $ değerinde yüksek sıcaklıkta kömür katranının damıtılmasından elde edilen yağlar ve diğer ürünler; benzer ürünler ve 184 milyon $ değerinde petrol kok, petrol bitüm ve petrol yağının veya bunlardan elde edilen diğer yağ kalıntılarını ihrac etmiştir. Petrol gazı ve diğer gaz halindeki hidrokarbonlar toplam ihracatın % 5,26'sını oluşturmuş ve 2019 yılında (2.379 milyon $), 2010 yılı ile (303.918 milyon $) kıyasla 7,8 kat artmış olup, Bitümlü minerallerden elde edilen petrol yağları ve sıvı yağlar (ham petrol hariç), içeren müstahzarlar ürünü ise 2019 yılında (463 milyon $) 2010 yılına (1.284 milyon $) kıyasla 2,8 kat düşüş izlenmiştir. Son zamanlar ihracatta artışın izlenen elektrik enerjisi 5 kat artmış ve 2019 yılında elektrik enerjisinin en önemli ithalatçı Gürcistan (%82,20) olmuştur. Diğer ithalatçı ülkeler, Rusya Federasyonu (%11,88), Türkiye (%4,72) ve İran İslam Cumhuriyeti (%1,20) olmuştur.


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2010-2019 yılları arasında en çok ithal edilen 10 ürün toplam ithalatın yaklaşık olarak %60’ını oluşturmuştur. Makineler, mekanik cihazlar, nükleer reaktörler, kazanlar ve parçaları, demir veya çelikten eşya, elektrikli makine ve teşhizat ve bunların yedek parçaları; ses kaydediciler ve çoğaltıcılar, televizyon, demiryolu veya tramvay vagonları dışındaki araçlar ve bunların parça ve akSESUARLARI toplam ithalatın %40’ını oluşturmaktadır. Yıllara göre ve ürün çeşitlerine göre ithalat hacmide deyişiklik izlenmiştir.

Tablo 4, Azerbaycan’ın 2009-2018 yılları arasında Kırgızistan’a yaptığı ihracat, ithalat, ticaret cirosu ve ticaret dengesini göstermektedir.

**Tablo 4: Azerbaycan’ın Kırgızistan ile Dış Ticaret Hacmi (milyon ABD $)**

<table>
<thead>
<tr>
<th>Yıllar</th>
<th>İhracat (milyon ABD $)</th>
<th>Ithalat (milyon ABD $)</th>
<th>Ticaret Cirosu (milyon ABD $)</th>
<th>Ticaret Dengesi (milyon ABD $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>40,541</td>
<td>1,006</td>
<td>41,547</td>
<td>39,535</td>
</tr>
<tr>
<td>2011</td>
<td>21,151</td>
<td>923</td>
<td>22,074</td>
<td>20,228</td>
</tr>
<tr>
<td>2012</td>
<td>26,677</td>
<td>2,241</td>
<td>28,918</td>
<td>24,436</td>
</tr>
<tr>
<td>2013</td>
<td>12,761</td>
<td>1,767</td>
<td>14,528</td>
<td>10,994</td>
</tr>
<tr>
<td>2014</td>
<td>25,800</td>
<td>1,703</td>
<td>27,503</td>
<td>24,097</td>
</tr>
<tr>
<td>2015</td>
<td>6,561</td>
<td>1,600</td>
<td>8,161</td>
<td>4,961</td>
</tr>
<tr>
<td>2016</td>
<td>5,638</td>
<td>1,087</td>
<td>6,725</td>
<td>4,551</td>
</tr>
<tr>
<td>2017</td>
<td>603</td>
<td>1,157</td>
<td>1,760</td>
<td>-554</td>
</tr>
<tr>
<td>2018</td>
<td>4,034</td>
<td>2,049</td>
<td>6,083</td>
<td>1,985</td>
</tr>
<tr>
<td>2019</td>
<td>2,744</td>
<td>3,040</td>
<td>5,784</td>
<td>-296</td>
</tr>
</tbody>
</table>

Kaynak: [www.trademap.org](http://www.trademap.org), (Erişim Tarihi: 03.09.2020)

Tablo 4’ten, 2010-2019 yılları arasında Azerbaycan’dan Kırgızistan’a yapılan ihracat hacminde dalgalı düşüş olduğu izlenmektedir. 2010 yılında Azerbaycan’ın Kırgızistan’a ihracat hacmi 40 milyon ABD dolları idiysese, 2019 yılında bu rakam 2.7 milyon ABD dollara düşmüştür. Azerbaycan’ın Kırgızistan’dan ithalatı ise oldukça düşük düzeyde olmuş ve 3 milyon ABD

Azerbaycan'ın 2010-2019 yılları arasında Kırgızistan ile yaptığı ithalat ve ihracat hacmini oluşturan ilk 10 üründen listesi Tablo 5’te gösterilmektedir.

**Tablo 5: Azerbaycan ve Kırgızistan'ın ithal ve ihraç ettiği ilk 10 ürün (Milyon ABD $)**

<table>
<thead>
<tr>
<th>Kod</th>
<th>İhraç</th>
<th>Toplam (2010-2019)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tüm ürünler</td>
<td>146510</td>
<td></td>
</tr>
<tr>
<td>'17</td>
<td>Şekerler ve şekerlemeler</td>
<td>52105</td>
<td>35.6%</td>
</tr>
<tr>
<td>'30</td>
<td>Eczacılıkla ilgili ürünler</td>
<td>40314</td>
<td>27.5%</td>
</tr>
<tr>
<td>'27</td>
<td>Mineral yakıtlar, mineral yağlar ve bunların damızlaşmasından elde edilen ürünler; bitümlü Maddeler; mineral</td>
<td>36691</td>
<td>25.0%</td>
</tr>
<tr>
<td>'39</td>
<td>Plastikler ve ürünler</td>
<td>5583</td>
<td>3.8%</td>
</tr>
<tr>
<td>'84</td>
<td>Makineler, mekanik cihazlar, nükleer reaktörler, kazanlar; parçaları</td>
<td>2157</td>
<td>1.5%</td>
</tr>
<tr>
<td>'15</td>
<td>Hayvansal veya bitkisel katı ve sıvı yağlar ve bunların parçalanma ürünler; hazırlanan yenilebilir yağlar; hayvan ...</td>
<td>1819</td>
<td>1.2%</td>
</tr>
<tr>
<td>'73</td>
<td>Demir veya çelikten eşya</td>
<td>1672</td>
<td>1.1%</td>
</tr>
<tr>
<td>'18</td>
<td>Kakao ve kakao müstahzarları</td>
<td>1367</td>
<td>0.9%</td>
</tr>
<tr>
<td>'32</td>
<td>Tabaklama veya boyama özleri; tanenler ve bunlarınтворleri; boyalar, pigmentler ...</td>
<td>1341</td>
<td>0.9%</td>
</tr>
<tr>
<td>'22</td>
<td>İçecekler, alkollü içkiler ve sirke</td>
<td>647</td>
<td>0.4%</td>
</tr>
<tr>
<td></td>
<td>Diğer</td>
<td>2814</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kod</th>
<th>İthal</th>
<th>Toplam (2010-2019)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tüm ürünler</td>
<td>16573</td>
<td></td>
</tr>
<tr>
<td>'85</td>
<td>Elektrikli makine ve teşhisat ve bunların parçaları; ses kaydediciler ve çoğaltıcılar, televizyon ...</td>
<td>8233</td>
<td>49.7%</td>
</tr>
<tr>
<td>'07</td>
<td>Yenilebilir sehzeler ve bazı kökler ve yumurlar</td>
<td>2367</td>
<td>14.3%</td>
</tr>
<tr>
<td>'30</td>
<td>Eczacılıkla ilgili ürünler</td>
<td>1707</td>
<td>10.3%</td>
</tr>
<tr>
<td>'84</td>
<td>Makineler, mekanik cihazlar, nükleer reaktörler, kazanlar; parçaları</td>
<td>1603</td>
<td>9.7%</td>
</tr>
<tr>
<td>'12</td>
<td>Yağlı tohumlar ve yağlı meyveler; çeşitli tahillar, tohumlar ve meyveler; endüstriyel veya tibbi ...</td>
<td>1000</td>
<td>6.0%</td>
</tr>
<tr>
<td>'08</td>
<td>Yenilebilir meyve ve sert kabuklu yemişler; narenciye veya kavun kabuğu</td>
<td>691</td>
<td>4.2%</td>
</tr>
<tr>
<td>'76</td>
<td>Alüminyum ve alüminyumdan esya</td>
<td>221</td>
<td>1.3%</td>
</tr>
<tr>
<td>'39</td>
<td>Plastikler ve bunlardan esya</td>
<td>171</td>
<td>1.0%</td>
</tr>
<tr>
<td>'06</td>
<td>Canlı ağaçlar ve diğer bitkiler, soğanlar, kökler ve benzerleri; kesme çiçekler ve süs yaprakları</td>
<td>153</td>
<td>0.9%</td>
</tr>
<tr>
<td>'48</td>
<td>Kağıt ve karton; kağıt hamurundan, kağıttan veya kartondan esya</td>
<td>81</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Diğer</td>
<td>346</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Kaynak: [www.trademap.org](http://www.trademap.org), (Erişim Tarihi: 04.09.2020)

5. İthal ve İhraç Verilerinin İstatistiği ve Bulgular

Tablo 6: Azerbaycan ile Kırgızistan Arasındaki İkili Ticaret Hacmi (Milyon ABD $)

<table>
<thead>
<tr>
<th></th>
<th>Azerbaycan'dan Kızılabistan İhracı</th>
<th>Azerbaycan'ın Dünya'ya İhracı</th>
<th>Azerbaycan'ın Dünya'dan İthalı</th>
<th>Kırıgsizistan'ın Dünya'ya İhracı</th>
<th>Kırıgsizistan'ın Dünya'dan İthalı</th>
<th>Dünya'ın İhracı</th>
<th>Dünya'ın İthalı</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>40,541</td>
<td>1,006</td>
<td>21,278,420</td>
<td>6,596,797</td>
<td>1,488,401</td>
<td>3,222,635</td>
<td>15,094,271,000</td>
</tr>
<tr>
<td>2011</td>
<td>21,151</td>
<td>0,923</td>
<td>26,486,189</td>
<td>9,732,869</td>
<td>1,978,932</td>
<td>4,260,687</td>
<td>18,103,446,701</td>
</tr>
<tr>
<td>2012</td>
<td>26,677</td>
<td>2,241</td>
<td>23,827,186</td>
<td>9,641,724</td>
<td>1,683,237</td>
<td>5,373,176</td>
<td>18,396,798,774</td>
</tr>
<tr>
<td>2013</td>
<td>12,761</td>
<td>1,767</td>
<td>23,904,108</td>
<td>10,763,392</td>
<td>1,773,228</td>
<td>5,983,024</td>
<td>18,875,061,792</td>
</tr>
<tr>
<td>2014</td>
<td>25,800</td>
<td>1,703</td>
<td>21,751,737</td>
<td>9,178,588</td>
<td>1,883,733</td>
<td>5,734,704</td>
<td>18,843,963,034</td>
</tr>
<tr>
<td>2015</td>
<td>6,561</td>
<td>1,600</td>
<td>12,646,294</td>
<td>9,214,281</td>
<td>1,646,443</td>
<td>3,937,726</td>
<td>16,530,691,171</td>
</tr>
<tr>
<td>2016</td>
<td>5,638</td>
<td>1,087</td>
<td>13,380,819</td>
<td>8,472,500</td>
<td>1,543,532</td>
<td>3,919,082</td>
<td>16,033,127,095</td>
</tr>
<tr>
<td>2017</td>
<td>0,603</td>
<td>1,115</td>
<td>15,306,018</td>
<td>8,767,799</td>
<td>1,790,758</td>
<td>4,481,291</td>
<td>17,694,951,675</td>
</tr>
<tr>
<td>2018</td>
<td>4,034</td>
<td>2,049</td>
<td>19,489,068</td>
<td>11,460,338</td>
<td>1,764,613</td>
<td>4,907,400</td>
<td>19,460,171,128</td>
</tr>
<tr>
<td>2019</td>
<td>2,744</td>
<td>3,040</td>
<td>19,635,580</td>
<td>13,649,269</td>
<td>1,965,502</td>
<td>4,903,813</td>
<td>18,754,622,224</td>
</tr>
</tbody>
</table>

Kaynak: [www.trademap.org](http://www.trademap.org), (Erişim Tarihi: 05.09.2020)

5.1. İhracat Yoğunluk Endeksi (EII)

2010-2019 yıllarında Azerbaycan ve Kırgızistan arasında ihraç yoğunluğu, ihraç yoğunluğu endeksi ile hesaplanmış ve analiz sonuçları tablolar 7'de sunulmuştur.
Tablo 7: Azerbaycan ve Kırgızistan arasında İhracat Yoğunluk Endeksi (2010-2019)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaycan Ell</td>
<td>9,2</td>
<td>3,5</td>
<td>3,9</td>
<td>1,7</td>
<td>3,9</td>
<td>2,2</td>
<td>1,7</td>
<td>1,6</td>
<td>0,8</td>
<td>0,5</td>
</tr>
<tr>
<td>Kırgızistan Ell</td>
<td>1,6</td>
<td>0,9</td>
<td>2,6</td>
<td>1,7</td>
<td>1,9</td>
<td>1,8</td>
<td>1,3</td>
<td>1,3</td>
<td>2,0</td>
<td>2,2</td>
</tr>
</tbody>
</table>

Kaynak: İhraç Yoğunluğu Endeksi hesaplarına göre tarafımdan oluşturulmuştur.


5.2. Ithalat Yoğunluk Endeksi (MII)

2010-2019 yıllarında Azerbaycan ve Kırgızistan arasında ithal yoğunluğu ithal yoğunluğu endeksi ile hesaplanmış ve analiz sonuçları Tablo 8’de sunulmuştur.
Tablo 8: Azerbaycan – Kırgızistan arasında İthalat Yoğunluk Endeksi (2010 - 2019)

![Graph showing import and export intensity indices between Azerbaijan and Kyrgyzstan from 2010 to 2019, with a trend line indicating a decrease in import intensity and an increase in export intensity.](image)

Kaynak: İthalat Yoğunluğu Endeksi hesaplarına göre tarafından oluşturulmuştur.


Sonuç

Bu makalede, Azerbaycan ile Kırgızistan arasındaki ikili ticaret yoğunluğunu hesaplamak için 2010-2019 istatistik verileri kullanarak analiz edilmiştir. İhracat yoğunluk endeksi ve ithalat yoğunluk endeksi analizinin ana sonuçları ülkelere ve yıllara göre aşağıdaki tabloda sunulmuştur.
Tablo 9: Azerbaycan ve Kırgızistan’ın yıllara göre MII ve EII değerleri

<table>
<thead>
<tr>
<th></th>
<th>Azerbaycan EII</th>
<th>Kırgızistan EII</th>
<th>Azerbaycan MII</th>
<th>Kırgızistan MII</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>9,2</td>
<td>1,6</td>
<td>1,5</td>
<td>8,9</td>
</tr>
<tr>
<td>2011</td>
<td>3,5</td>
<td>0,9</td>
<td>0,9</td>
<td>3,4</td>
</tr>
<tr>
<td>2012</td>
<td>3,9</td>
<td>2,6</td>
<td>2,5</td>
<td>3,8</td>
</tr>
<tr>
<td>2013</td>
<td>1,7</td>
<td>1,7</td>
<td>1,7</td>
<td>1,7</td>
</tr>
<tr>
<td>2014</td>
<td>3,9</td>
<td>1,9</td>
<td>1,9</td>
<td>3,9</td>
</tr>
<tr>
<td>2015</td>
<td>2,2</td>
<td>1,8</td>
<td>1,7</td>
<td>2,2</td>
</tr>
<tr>
<td>2016</td>
<td>1,7</td>
<td>1,3</td>
<td>1,3</td>
<td>1,7</td>
</tr>
<tr>
<td>2017</td>
<td>1,6</td>
<td>1,3</td>
<td>1,3</td>
<td>1,6</td>
</tr>
<tr>
<td>2018</td>
<td>0,8</td>
<td>2,0</td>
<td>2,0</td>
<td>0,8</td>
</tr>
<tr>
<td>2019</td>
<td>0,5</td>
<td>2,2</td>
<td>2,1</td>
<td>0,5</td>
</tr>
<tr>
<td>MII,EII&lt;1</td>
<td>2018, 2019</td>
<td>2011</td>
<td>2011</td>
<td>2018, 2019</td>
</tr>
</tbody>
</table>

Kaynak: Araştırmacı Sonuçları


Tablo 9'da sunulmuş analiz değerlerine göre, 2010-2019 yılları arasında Azerbaycan'ın Kırgızistan ile iki taraflı ticaret ilişkisinin ithalat yoğunluk endeksi 1’den büyük olmuş ve 2011 yılında ise 1’e yakın deyерle ortalağa dünya ithalat hacminin altında gerçekleşmiştir. Genel olarak 2010 yılından

Kaynakça

Altay, Hüseyin. (2010). ‘’Ticari Yoğunlaşma kapsamında Türkiye'nin Küresel ölçekli Dış Ticaret ilişkileri’’, Yüksek Lisans Tezi, Dumlupınar Üniversitesi, Sosyal bilimler yayını, Say 26: 2, Kütahiya, Türkiye


Azerbaycan Cumhuriyeti Cumhurbaşkanı Kararı (14 Temmuz 2010), “Pamuk Yetiştiriciliği Hakkında” 1012-IIIQ sayılı Azerbaycan Cumhuriyeti Kanunu, Bakü şehri, Azerbaycan


Bağırov, Aliq ve İbrahimov, Anar. (2019), ´´Bilateral Trade Intensity Between Azerbaijan And Poland (2003-2016 period)´´, III InTraders Uluslararası Uluslararası Ticaret Bildiri Kitabı Konferansı, Sakarya, Türkiye

Bedelov, Aliqismet (2 Mart 2010), “Müstəqil Azərbaycan dövləti bizim ən böyük sərvətəmizdir!” “Xalq” gazetesi, Bakü, Azerbaycan


www.library.aliyev-heritage.org

www.comtrade.un.org

www.stat.gov.az

www.trademap.org

www.wits.worldbank.org
Bilgi ve İletişim Teknolojileri Kullanımı, İstihdam ve Ekonomik Büyüme İlişkisi

Nurcan Ece
Gülデンur Çetin

Özet

Bu çalışmada BİT kullanımı, istihdam ve ekonomik büyüme ilişkisi açıklanmaya çalışılmıştır. Bu doğrultuda 35 OECD ülkesine ait 2010-2019 yılları arasındaki veriler panel veri analizi yöntemi ile incelenmiştir. Çalışmada ekonomik büyüme değişkeni olarak, kişi başına düşen GSYİH oranı, istihdam değişkeni olarak, istidamın nüfusa oranı ve BİT değişkenleri olarak bireysel internet kullanıcıları, sabit geniş bant abonelikleri ve aktif mobil geniş bant abonelikleri baz alınmıştır. Çalışma sonucunda BİT kullanımı ifade eden bireysel internet kullanıcıları, sabit geniş bant abonelikleri değişkenleri istihdam ve ekonomik büyüme üzerine herhangi bir etki yaratmazken, aktif mobil geniş bant abonelikleri değişkeni istihdam ve ekonomik büyüme üzerinde pozitif etki gösterdiği tespit edilmiştir.

Anahtar Kelimeler: Bilgi ve İletişim Teknolojisi, İstihdam, Ekonomik Büyüme, Panel Veri Analizi

JEL Kodları: O39, E24, O40, C33
The Use of Information and Communication Technologies, The Relationship between Employment and Economic Growth

Abstract

In this study, the use of ICT has been tried to explain the relationship between employment and economic growth. Accordingly, data of 35 OECD countries between 2010-2019 were examined by panel analysis method. In the study, as variable of economic growth, the ratio of GDP per capita and as a variable of employment, the ratio of employment to the population(+15). As ICT variables, individual internet users, fixed broadband subscriptions and active mobile broadband subscriptions were taken as the basis. As a result of the study, Of the variables expressing the use of ICT, individual internet users and fixed broadband subscriptions do not have any impact on employment and economic growth, but Active mobile broadband subscriptions have been found to have a positive impact on employment and economic growth.

Keywords: Information and Communication Technology, Employment, Economic Growth, Panel Data Analysis

JEL Codes: O39, E24, O40, C33
1. Giriş


Bilgi ve iletişim teknolojilerinin yaygınlaşması, üretim sürecine dahil edilmesi verimliliği artıran bir etkendir bu daha kısa sürede ve daha az maliyetle daha fazla çıktı üretilmesinden kaynaklanmaktadır. Ve dolaylı olarak ekonomik büyüme pozitif yönde katkı sağlayan bir etken olarak görülmekteyse de sonuçlanmaktadır.

Aynı zamanda BİT kullanımının yaygınlaşması ve üretim sürecine dahil edilmesi yeni sektörler, pazarlar ve meslekler oluşturduğu istihdamı artıran bir etki gösterdiğini söyleyebilirken, ürünlerin piyasada sürekli yenilenmesi eski üretim tipine ait sektörlerle, pazarlara ve mesleklerle olan ilgiyi ve talebi azalttıklarından üreticilerin stratejilerini değiştirmelerine sebep olurken, süreçte ayak uyduramayan üreticiler尤其是 ise istihdamı daraltıcı bir etki gösterdiğini söyleyebiliriz (Appiah-Otoo & Song, 2021; Yangınlar & Köksal, 2022).

Bu çalışmada 35 OECD ülkesinde BİT kullanımının, istihdam ve ekonomik büyümeye üzerine etkileri tahmin edilmeye çalışılmıştır. Bu kapsamda çalışmada ilk olarak BİT kullanımının istihdam ve ekonomik büyümeye üzerine etkileri ele alınan literatür taraması ile desteklenmiştir. Literatür incelemesinde genel olarak teknolojik gelişme göstergelerinin ekonomik büyümeye etkisi olumlu yöndeken bazı göstergelerin etkisiz ya da olumsuz etkilediği görülmuştur ve BİT kullanımının istihdamı olan etkisi konusunda literatürde herhangi bir fikir birliğine varılmadığı sonucuna ulaşılmaktadır.

Çalışmanın devamında araştırma metodu ve veri seti açıklanmış, çalışma sonucu elde edilen ekonometrik analiz bulguları değerlendirilmiştir ve son olarak literatür ve ekonometrik analiz bulguları ışığında çalışma sonuç kısmı ile sonlandırılmıştır.
2. BİT, Ekonomik Büyüme ve İstihdam Üzerine Literatür Taraması

Literatürde yapılan ampirik çalışmalar doğrultusunda teknolojik gelişme göstergesi olarak ele alınan değişkenlerin ekonomik büyümeye pozitif katkı sunduğu söylenebilmekteyken, teknolojik gelişmelerin istihdama olan etkisi konusunda fikir birliğine varılmamıştır.


Çalışmalarından edinilen sonuçlara göre teknolojik gelişme, tarım sektörü istihdamı üzerine etkisi negatifken, sanayi ve hizmet sektörü istihdamı üzerine etkisi pozitiftir.

Myovella, Karacuka ve Haucap (2020), 41 SSA (Sahra Altı Afrika) ülkesi ve 33 OECD ülkesi olmak üzere toplamda 74 ülke üzerinden 2006-2016 yılları arasında GMM (Genişletilmiş Momentler Metodu), OLS (En Küçük Kareler Yöntemi) modellerini kullanarak dijitalleşmenin ekonomik büyümeye etkisini ele alan ülkeler bazında karşılaştırmalı olarak analiz yapılmıştır. Çalışmalarından edindikleri sonuçlara göre ekonomik büyümeye mobil teknolojilerin etkisi SSA ülkelerinde fazla iken OECD ülkeleri için bu etki önemlidir değildir. Bireysel internet kullanım oranı her ülke gruba ekonomik büyüme pozitif etki sağlamaktadır ve bununla beraber SSA ülkelerinde internet alt yapılarındaki az gelişmişlik nedeniyle ekonomik büyümeye etkisi düşüktür.


Farhadi ve Fooladi (2020), 142 ülkenin verileri üzerinden 2006-2015 yılları arasında GMM (Genişletilmiş Momentler Metodu) modellerini kullanarak BİT erişiminin ekonomik büyümeye üzerine etkisi analiz edilmiştir. Çalışmalarından edindikleri sonuçlara göre ekonomik büyümeye BİT’in etkisi yüksek gelirli ülkelerde daha fazla olmasına karşın her ülkede arttırıcı etkiye sahiptir.

Alper (2018), 24 ülke üzerinden 1996-2016 yılları arasında Panel veri yöntemi kullanılarak iki model oluşturulmuş ve BİT’in, ekonomik büyume ve işsizlik ilişkisini analiz etmiştir. Çalışmada edindikleri sonuçlara göre BİT, ekonomik büyümeyi artırır ve işsizliği azaltır.


Algan, Özmen ve Karlılar (2017), 2000-2014 yılları arasında G-20 ülkeleri (7 Gelişmiş ve 13 Gelişmekte Olan) üzerinden BİT ve ekonomik büyume ilişkisini panel veri yöntemi ile analiz edilmiştir. Çalışmada edinilen sonuçlara göre gelişmiş ülkelerde pozitif bir etki söz
konusuyken, gelişmekte olan ülkelerde ve G-20 ülkelерinin tamamında negatif bir etki söz konusudur.


Matei ve Savulescu (2012), AB üye ülkelere verileri üzerinden 2006-2010 yılları arasında ampirik analiz yapılmıştır. Çalışma sonucunda BİT’in GSYİH’a olan katkısı rekabet gücünü de artıracaktır.

Farhadi, Ismail ve Fooladi (2012), 159 ülkenin verileri üzerinden 2000-2009 yılları arasında GMM (Genişletilmiş Momentler Metodu) modellerini kullanarak analiz yapılmışlardır. Çalışmalarından edindikleri sonuçlara göre ekonomik büyümeye BİT’in yüksek gelirli ülkelerde daha fazla olmasına karşın her ülkede artırıcı etkiye sahip olmasıdır.
3. Ekonometrik Yöntem, Veri Seti ve Kaynağı


\[
\begin{align*}
\text{Log}(\text{GSYIH}_{it}) &= \alpha_{it} + \beta_{1i,t}\text{Log}(\text{BI}_{it}) + \beta_{2i,t}\text{Log}(\text{SGB}_{it}) + \beta_{3i,t}\text{Log}(\text{MGB}_{it}) + \varepsilon_{it} \quad (1) \\
\text{Log}(\text{IST}_{it}) &= \alpha_{it} + \beta_{1i,t}\text{Log}(\text{BI}_{it}) + \beta_{2i,t}\text{Log}(\text{SGB}_{it}) + \beta_{3i,t}\text{Log}(\text{MGB}_{it}) + \varepsilon_{it} \quad (2)
\end{align*}
\]

Denklemde yer alan \( i \) panel verinin birim boyutunu, \( t \) zaman boyutunu ifade eder. \( \beta \) (i=1, 2, 3,) bağımsız değişkenlerin (BI, MGB, SGB) bağımlı değişkenler (IST ve GSYIH) üzerindeki etkilerinin tahminini ifade eden tahmin parametrelerini, \( \alpha \) sabit terimi, \( \varepsilon \) ise denklem hata terimlerini ifade etmektedir.

Çalışmada ele alınan her iki model için bağımlı değişkenler ekonomik büyüme ve istihdam iken bağımsız değişken olarak kullanılan BİT kullanımı üç parametre ile açıklanmıştır. Kullanılan veriler, kaynakları ve çalışmada ele alınan ülkeler Tablo 1,2’de verilmiştir.

**Tablo 1.** Model 1 ve 2’ye Ait Veri Seti - Kaynağı

<table>
<thead>
<tr>
<th>Değişken</th>
<th>Açıklama</th>
<th>Kaynak</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSYIH</td>
<td>Kişi başına GSYIH (ABD doları)</td>
<td>World Bank</td>
</tr>
<tr>
<td>IST</td>
<td>İstihdamın nüfusa oranı, (15+, toplam (%))</td>
<td>World Bank</td>
</tr>
<tr>
<td>BI</td>
<td>Bireysel internet kullanıcıları (%)</td>
<td>ITU</td>
</tr>
<tr>
<td>SGB</td>
<td>Sabit geniş bant abonelikleri (100 kişi başına)</td>
<td>ITU</td>
</tr>
<tr>
<td>MGB</td>
<td>Aktif mobil geniş bant abonelikleri (100 kişi başına)</td>
<td>ITU</td>
</tr>
</tbody>
</table>

**Tablo 3.** Çalışmada Ele Alınan Ülkeler

<table>
<thead>
<tr>
<th>Almanya</th>
<th>Finandiya</th>
<th>Kosta Rika</th>
<th>Polonya</th>
<th>İrlanda</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABD</td>
<td>Fransa</td>
<td>Letonya</td>
<td>Portekiz</td>
<td>İspanya</td>
</tr>
<tr>
<td>Avusturya</td>
<td>Güney Kore</td>
<td>Litvanya</td>
<td>Slovak Cumhuriyeti</td>
<td>İsrail</td>
</tr>
<tr>
<td>Belçika</td>
<td>Hollanda</td>
<td>Lüksemburg</td>
<td>Slovenya</td>
<td>İsviçre</td>
</tr>
<tr>
<td>Birleşik Krallık</td>
<td>Japonya</td>
<td>Macaristan</td>
<td>Türkiye</td>
<td>İsviçre</td>
</tr>
<tr>
<td>Danimarka</td>
<td>Kanada</td>
<td>Meksika</td>
<td>Yunanistan</td>
<td>İtalya</td>
</tr>
<tr>
<td>Estonya</td>
<td>Kolombiya</td>
<td>Norveç</td>
<td>Çek Cumhuriyeti</td>
<td>İzlanda</td>
</tr>
</tbody>
</table>
4. Bulguların Değerlendirilmesi


<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>σ^2_u</strong></td>
<td><strong>σ^2_u</strong></td>
</tr>
<tr>
<td>Log(GSYIH)</td>
<td>0.4726513</td>
</tr>
<tr>
<td>ε</td>
<td>0.00979</td>
</tr>
<tr>
<td>µ</td>
<td>0.1423325</td>
</tr>
</tbody>
</table>

\[ X^2(01) = 952.71*** \quad \text{Sig.}=0.000 \]
\[ X^2(01) = 1026.37*** \quad \text{Sig.}=0.000 \]

Not: ***(%1) anlamlılık düzeyinde H₀ hipotezi reddedilmiştir, \( x^2 \): Ki-Kare test istatistiğini, \( \sigma^2_u \): Birim Etki Varyansını, \( \sqrt{\sigma^2_u} = \sigma_u \): Standart Hatayi, ε: Hata Terimini ve µ: Birim Etkisini ifade eder.

Her iki modelde hesaplanan test istatistiği anlamlılık değerleri incedendiğinde modeller için %1 anlamlılık düzeyinde birim etkisinin sıfır olduğu yönündeki sıfır hipotezlerinin reddedildiği görülmektedir. \( x^2(01) = 952.71 \) ve \( x^2(01) = 1026.37 \) Sig.<0.01).

**Tablo 5. Hausman Test İstatistiği**

<table>
<thead>
<tr>
<th>Değişken</th>
<th>SE(b)</th>
<th>TE(B)</th>
<th>Fark (b-B)</th>
<th>SE(b)</th>
<th>TE(B)</th>
<th>Fark (b-B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log(BI)</td>
<td>-0.05881</td>
<td>-0.01067</td>
<td>-0.04814</td>
<td>-0.07115</td>
<td>-0.08817</td>
<td>0.01702</td>
</tr>
<tr>
<td>Log(SGB)</td>
<td>0.08628</td>
<td>-0.17672</td>
<td>0.26300</td>
<td>0.05062</td>
<td>0.05733</td>
<td>-0.00671</td>
</tr>
<tr>
<td>Log(MGB)</td>
<td>0.04548</td>
<td>0.08916</td>
<td>-0.04368</td>
<td>0.03979</td>
<td>0.04095</td>
<td>-0.00116</td>
</tr>
</tbody>
</table>

Test $X^2(03) = 189.23^{***}$ Sig $=0.001$ $X^2(03) = 14.24^{***}$ Sig $=0.003$

Not: ***(%1) anlamlılık düzeyini, $X^2$: Ki-Kare test istatistiğini, *Parantez içi serbestlik derecesini gösterir, b: Sabit Etkileri B: Tesadüfi Etkileri, (b-B) etkiler arası farkı ifade eder.

Modeller için hesaplanan katsayılara ve katsayılardaki farklara bakıldığında sözcü farkların yüksek olduğu görüürken, test istatistiği anlamlılık değerleri incelendiğinde %1 anlamlılık düzeyi için her iki model için de tesadüfi etkiler tahmincisinin data tutarlı bir tahminci olduğu yönünde sıfır hipotezinin reddedildiği, sabit etkiler tahmincilerinin daha tutarlı olduğu yönünde alternatif hipotezlerin ise kabul edildiği görülmektedir. ($X^2(01)=189.23$ ve $X^2(01)=14.24$, Sig.$<0,01$)

### Tablo 6. Model Tahminleri

<table>
<thead>
<tr>
<th>Değişken</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>S.H&lt;sub&gt;Cluster&lt;/sub&gt;</td>
</tr>
<tr>
<td>Log(BI)</td>
<td>-0.0107</td>
<td>0.2258</td>
</tr>
<tr>
<td>Log(SGB)</td>
<td>-0.1767</td>
<td>0.1630</td>
</tr>
<tr>
<td>Log(MGB)</td>
<td>0.0892</td>
<td>0.0403</td>
</tr>
<tr>
<td>Sabit</td>
<td>10.5912</td>
<td>0.8697</td>
</tr>
</tbody>
</table>

### Tansısal İstatistikler

| F Test | F(3,34)=3.23** | F(3,34)=6.79*** |
|        | Sig.=0.034     | Sig.=0.001      |
| Pesaran Test | 2\(^2\)(10)=26.153*** | 2\(^2\)(10)=10.193*** |
| Sig.=0.000 | Sig.=0.000 |
| LBI      | 0.87024        | 0.79393         |
| D.W.     | 0.59125        | 0.38446         |
| Modifiye Test | 2\(^2\)(35)=402.020*** | 2\(^2\)(35)=15298.320*** |
| Walt     | Sig.=0.000     | Sig.=0.000      |

### Determinasyon

<table>
<thead>
<tr>
<th>Grupsz</th>
<th>R(^2)=0.0725</th>
<th>Grupsz</th>
<th>R(^2)=0.3192</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gruplar Arası</td>
<td>R(^2)=0.3398</td>
<td>Gruplar Arası</td>
<td>R(^2)=0.0120</td>
</tr>
<tr>
<td>Tüm</td>
<td>R(^2)=0.2545</td>
<td>Tüm</td>
<td>R(^2)=0.0345</td>
</tr>
</tbody>
</table>


Model 1 ve 2 için Tablo 6 incelendiğinde, Pesaran testi bulguları sonucunda modellerde yer alan birimler ve hata terimleri arasındaki ilişki %1 anlamlılık düzeyinde istatistiksel olarak önemlidür, farklı bir ifade ile modelde yatay kesit bağımlılığı görülmektedir. (Model 1: χ\(^2\)(10)=26.153, Sig.<0.01), (Model 2: χ\(^2\)(10)=10.193.153, Sig.<0.01).

LBI ve D.W testi bulguları incelendiğinde her iki modelde değerin 2’den küçük olduğu görülmektedir ve iki modelde otokorelasyon varlığı söz konusudur. Modelde sabit varyans varsayıımını sağlayan Modifiye edilmiş Wald testi istatistikleri incelendiğinde ise %1 anlamlılık düzeyinde istatistiksel olarak önemli bir değişen varyans sorunu olduğu dikkat çekmektedir. (Model 1: χ\(^2\)(35)=402.020, Sig.<0.01), (Model 2: χ\(^2\)(35)=15298.320, Sig.<0.01)

Model 1 parametrelerinin toplu anlamlılık test olan F testi istatistiklerine göre tahmin edilen model, %5 anlamlılık düzeyinde istatistiksel olarak anlamlı bir modeldir. (F(3,34)=3.23, Sig.<0.05),

Model 2 parametrelerinin toplu anlamlılık test olan F testi istatistiklerine göre tahmin edilen model, %1 anlamlılık düzeyinde istatistiksel olarak anlamlı bir modeldir. (F(3,34)=6.79, Sig.<0.01)

Bireysel internet kullanıcıları Log(BI) değişkeninin, ekonomik büyüme ve istihdam üzerinde önemli bir etkisinin olmadığı görülmektedir. (Model 1: β=-0.0107, Sig.>0.10), (Model 2: β=-0.0107, Sig.>0.10)

Sabit geniş bant abonelikleri Log(SGB) değişkeninin, ekonomik büyüme ve istihdam üzerine önemli bir etkisinin olmadığı görülmektedir. (Model 1: β=-0.1767, Sig.>0.10), (Model 2: β=0.0532, Sig.>0.10)

Aktif mobil geniş bant abonelikleri Log(MGB) değişkenin ise ekonomik büyüme ve istihdam üzerine önemli ve pozitif bir etkisinin olduğu görülmektedir. (Model 1: β=-0.1767, Sig.<0.05), (Model 2: β=0.1784, Sig.<0.05)

5. Sonuç

35 OECD ülkesine ait 2010 ile 2019 yılları arasında ele alınan BİT kullanım değişkenleri ile istihdam, ekonomik büyüme ilişkisi çalışma kapsamında incelenmiştir. Ekonomik büyüme kişi başına düşen GSYİH (ABD doları cinsinden) ile, istihdam oranı (İstihdamın nüfusa oranı, (15+, toplam %)) ile ve BİT kullanımı literatürle paralel olarak, bireysel internet kullanıcıları (%), sabit geniş bant abonelikleri (100 kişi başına) ve aktif mobil geniş bant abonelikleri (100 kişi başına) parametreleri ile iki ekonometrik model kurularak açıklanmıştır ve panel analiz yöntemi ile analiz edilmiştir.

Analiz sonuçlarına göre 2 Modelde de bağımlı değişkenler ve bağımsız değişkenler arasında anlamlı bir ilişki vardır. Ve BİT kullanım parametrelerinden bireysel internet kullanıcıları (%) ve 100 kişi başına sabit geniş bant abonelikleri değişkenleri istihdam ve ekonomik büyüme
üzerinde istatistiksel olarak önemli bir etki yaratmakken, 100 kişi başına aktif mobil geniş bant abonelikleri değişkeni istihdam ve ekonomik büyüme üzerinde pozitif bir etki yaratmaktadır.

100 kişi başına sabit geniş bant aboneliklerinin analiz sonuçlarına göre istihdam ve ekonomik büyüme ile ilişkisinin etkisiz çıkmasının sebebi özellikle son yıllarda 100 kişi başına aktif mobil geniş bantların, 100 kişi başına sabit geniş bantlara göre daha fazla talep edilmesi ve yatırım almasından kaynaklı olduğu düşünülmektedir.

Çalışmada elde edilen bulgular literatür ile parallel olmakla beraber ve BİT kullanımının, istihdam ve ekonomik büyüme ilişkisi anlamlı sonuçlanmıştır.

Sonuç olarak, literatürden de elde edilen edinimlere göre, günümüzde sosyal ve ekonomik yapının gelişmesi için temel faktörlerden birinin bilgi olduğu görülmektedir. Bilginin işlenmesini sağlayan BİT araçları ise bu gelişime destek sağlamaktadır. BİT kullanımının arttırılması ve teşvik edilmesi, BİT erişimi altyapılarının güçlendirilmesi, BİT yatırımlarının ve BİT üretiminin arttırılması ekonomik göstergeleri iyileştirilecektir ve ülkelerin bu yönde gelişimleri küresel rekabet ortamında varlıklarını devam ettirebilmeleri için önem arz etmektedir.
Kaynakça


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Capital Structure And Financial Crisis: Evidence From Turkey

Mohamed Mohamud MAKARAN¹

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Abstract

The Financial crisis (FC) displayed a crucial impact on the financial markets, incredibly decreasing security issuance by companies. A standout amongst the outcome of the interruption of the capital furthermore lending markets created by financial crisis might have been enhancing the level of debt in firm capital structures. Therefore, this paper uses Dynamic Panel Data (GMM) Estimator in order to investigate the impact financial crisis on capital structure over a sample of 15 cement firms that are recorded on Istanbul Stock Exchange from 2005 to 2017. Financial debt is utilized as evaluation of dependent variables (DV) while, Size, Growth, Tangibility and Profitability are used in assessment of independent variables (IV). The results indicate that there is connection between firm’s capital structure and financial crisis. Furthermore; the results express that firm size, tan, growth are positive associated with leverage while profitability, NDTS, CR, Crisis and leverage are negatively related.

Keywords: Capital Structure, Leverage, Liquidity, Financial Crisis, and Cement Companies.
JEL Codes: G30, G01, G32, L61

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1. **Introduction**

Choosing the suitableness capital structure may be the critical choice of the financial management. As a result, it is almost recognized the corporate value. Furthermore, the structure of capital states that all the kind of securities and also the amounts of proportion that create capitalization. This is the mixture of various sources of long-term sources for example, such that equity, share, preference share, debentures, long-term credits also retained earnings. To start with talk regarding the capital structure, Modigliani and Mill (1958) expressed that the capital structure of organizations does not impact on the corporation’s value. Besides, according to Modigliani and Miller’s contention will be in light of a few presumptions for example, there will be a perfect capital market, there are no retained earnings and corporate taxes, the investors’ gesture rationally, the dividend payout ratio may be hundred percent and the business comprises of the same level of firm risk (Paramasivan and Subramanian, 2009).

The term crisis in finance is named as an interruption to financial markets in which unfavorable choice furthermore, moral risk issues get extensively unpleasant, thus, financial markets can incapable to proficiently channel fund with the persons that gain the best fruitful fund chances (Mishkin, 2001:2). A financial crisis thus brings about disappointment or failure of financial markets to work efficiently, which prompts a sharp contraction in economic action. Researchers are attempting to understand the effect of the crisis in finance on the capital structure of company.

Did the financial crisis effect on Capital Structure in Turkey Cement companies or not? In order to find the answer for this question, this study researches the impact of the crisis in finance on the capital structure of Cement companies in Turkey for the period of 2005-2015. The research is arranged into five categories. The first one as introduction, the second section as literature reviews while methodology is discussed in the third one. Finally; section four focuses on the results and section five highlights the study conclusion.
2. Literature Review

2.1 Theories of Capital Structure

Capital structure is defined by Brigham and Ehrhardt (2013) as the firm’s mixture of debt and equity hence a considerable studies have been carried out highlighting diverse parts of the capital structure theories for companies. anyhow this quest began with Modigliani and Miller (1958) at they provided for their theory of irrelevency: capital structure is unimportant of the firm’s worth done impeccable market with symmetric information when there would no agency costs, bankruptcy costs and taxes. Modigliani and Miller (1963) included corporate taxes in their model furthermore found that the firm worth build or grow at the leverage raise because the tax-deductibility of debt.

Miller (1977) himself included personnel taxes also pointed that the income from debt, which will be by interest, may be, is taxed concerning personal income, same time the income from stocks is taxed during a lower rate and the tax of capital gains might deferred until the stock may be sold thus he closed that the deductibility of interest favors the utilization of debt financing, yet supporting a better successful tax treatment of revenue from stock favors the utilization of equity financing.

In the static trade-off theory, a company’s optimal capital structure is arrived at when a trade off costs and benefit to borrowing, at the margin eventually by cost of financial distress as stated by Myers (1984).

He demonstrates an additional theory (1984) organizations prefer toward with pecking order, i.e. organizations like internal finance (retained earnings) by reinvesting its profit furthermore selling its marketable securities.

Jensen and Meckling (1976) state that the agency theory might be a demonstration to transform the capital structure and it portrays the separation between principal and agent

In signaling theory, MM accepted that investors have the same information something like a business’s prospects likewise managers. This may be called symmetric information. However, managers frequently have better information over outside investors. This may be titled asymmetric information. Asymmetric information has crucial influence on the optimal capital structure (Brigham and Houston, 2003).
2.2 Capital Structure Determinants

Size, growth, tangibility, profitability, non-debt tax shield and liquidity are the major factors that determine capital structure. Size of the firm impacts the capital structure. Huge numbers of researchers have various conclusions over the correlation between size and capital structure. For example, Rajan and Zingales (1995), consider capital structure and factors affecting capital structure for a test of G7 countries. They found debt and size are positively related for all G-7 countries and just to Germany showed up for a chance to be negative. Titman and Wessels (1988) presume that firm size and capital structure are connected.

In the findings of Wald (1999) to study size and leverage, a positive relationship was found for organizations in the USA, UK, France and Japan however a negative relationship was recorded for German Organizations.

On the different hand, there are other researchers with an additional conclusion for example Tong and Green, (2005), presume that size and also capital structure are negatively linked.

Growth likewise impacts the capital structure. As indicated by the theory of pecking order theory, initial preference to finance a new investment is with internal funds; therefore, according to Titman and Wessels (1988) show that growth and leverage are negatively connected.

According to Green et al. (2001) trust that this negative association between leverage and growth will be that organizations don't differentiate long term and short-term obligation.

Researchers have demonstrated opposing outcomes in regards profitability furthermore leverage for their investigations. Pecking order theory proposes that profitability and leverage are negatively related. Anyway trade-off theory asserts concerning illustration the organizations would profitability hence they might want to keep their internal funds and might access to outside funds with particular finance their investment.

A few investigations by researchers have demonstrated a negative association the between profitability and leverage according to Chen, 2004; Tong and Green, 2005 which helps to the pecking order theory. Similarly, the forecasts done by pecking order theory show that a firm’s profitability tends to employ less debt financing as they are show ability to accumulate profit in large amounts (Jermias and Yigit, 2019).
As stated by Myers and Majluf (1984), tangibility and leverage are relied upon with bring a sure positive association. They stated that organizations by issuing secured debt might have the ability to reduce information asymmetries generally it might a chance to be costly for them similarly as different investors have information over it.

On contrast, Titman and Wessle (1988) argue that this association might be negative as exactly managers might devour more than the optimal level they are permitted.

Non-debt tax shield will be appropriate to the organizations if company's profit is reliably turning into low or it is negative.

DeAngelo and Masulis (1980) state that one alternative to tax shield on debt financing is NDTS.

Studies have demonstrated truly blended outcomes in regards to the association between NDTS and leverage. Bradley et al. (1984) have demonstrated positive relationship the between of the NDTS and leverage however Wald (1999) have indicated a negative relationship between of NDTS and leverage.

Antoniou (2008) and Mazur (2007) specified that leverage and liquidity are negatively linked, something like that organizations having more liquid might issue less debt and utilize their internal return rather to perform their organizations. Abdullah (2005) communicated that short term debt and liquidity show a critical negative relationship.

2.3. Capital Structure and Financial Crisis in Prior studies

Gocmen and Sahin (2014) studied the determinants of bank capital structure and the Global financial crisis of Turkish commercial banks for a period 2004-2011. They figured out that profitability of commercial banks in Turkey and leverage ratios were significant negatively related. With highly fluctuating operating income, Turkish commercial banks prefer to use less leverage before and after the crisis. Also, the results reveal that larger banks with higher potential for growth utilize more leverage.

Proenca et al., (2014) investigates the determinants of capital structure and the 2008 financial crisis of SMEs in Portuguese for period 2007-2010. Results indicate that the most essential factors of capital structure are liquidity, asset structure, and profitability. The findings point to a declining trend in company debt ratios during the financial crisis.
Zhang and Mirza (2015) looked into the determinants of capital structure of firms in financial crisis with sample 897 Chinese listed non-financial firms during the period between 2003-2012. The investigator reached to the conclusion that liquidity has remained unchanged in both pre and post financial crisis periods, although tax, non-debt tax shield, tangibility, economic development and inflation have all witnessed an extremely significant.

3. Research Methodology

The financial crisis results in the failure of financial markets to function efficiently, significantly lending by financial intermediaries or/ and reducing issuance of security. However, one of the outcomes of the interruption of capital and lending markets created by a crisis in finance is a result of an increment in the amount of debt. So in this study, we find out the impact of recent crises in finance on the capital structure of 15 Cement companies in Listed ISE in Turkey for period between 2005 and 2017. The effect of the crisis in the finance company’s capital structure is inspected through panel data regression models. Panel data sets would for the most part portrayed toward a test about units observed over a number for periods permitting analysts or researchers should apply complex models over the ones utilized within cross-sectional or time series analysis.

3.1. Sample and Data

Though ISE Trading Index list seventeen (17) cement firms, a sample of only of fifteen (15) companies are chosen. These 15 companies are shown below:

- ADANA ÇİMENTO SANAYİ T AŞ
- AFYON ÇİMENTO SANAYİ T. AŞ.
- ÜNYE ÇİMENTO SANAYİ VE TİCARET A.Ş.
- ASLAN ÇİMENTO AŞ.
- NUH ÇİMENTO SANAYİ A.Ş.
- GÖLTAŞ GÖLLER BÖLGESİ ÇİMENTO SANAYİ VE TİCARET A.Ş.
- MARDİN ÇİMENTO SANAYİİ VE TİCARET A.Ş.
- BURSA ÇİMENTO FABRİKASI A.Ş.
Data used in the study is mainly secondary data. It is obtained from the cement firms listed on ISE public disclosure platform (www.kap.gov.tr) for the period 2005-2017. The data was analyzed using STATA software package GMM to create a model that was used to achieve the objective of the study.

3.2. Measurement of Variables

3.2.1. Dependent Variable (DV)

The study uses three dependent variables to measure the financial debt (Leverage), i.e. the capital structure, are:

1. Total debt ratio (TD) is a proxy measure of the firm’s capital. TD is measured as the following:
   \[
   \text{Debt ratio} = \frac{\text{Total debt}}{\text{Total asset}}
   \]

2. Short-term debt ratio (STD) is a proxy measure of a firm’s capital structure, measured by:
   \[
   \text{Short term debt ratio} = \frac{\text{total short term debt}}{\text{Total assets}}
   \]

3. Long term debt ratio (LTD) is dependent variable. It is proxy of the capital structure of the corporation, measured by:
   \[
   \text{Long term debt ratio} = \frac{\text{Total long term liabilities}}{\text{Total assets}}
   \]

3.2.2. Independent Variable (IV)

To investigate the effect financial crisis on capital structure the researcher uses the following variables and formulas:

1. **Size:** it was used as independent variables and the formula to calculate it is as the following:
   \[
   \text{The Natural Logarithm of Total Assets}
   \]
2. **Growth**: it was used as independent variable and the formula to calculate growth is calculated as the following:

\[
\frac{(\text{Sales}_t - \text{Sales}_{t-1})}{\text{Sales}_{t-1}}
\]

3. **Tangibility**: it was employed as independent variable and Tangibility is calculated as following:

\[
\text{Tangibility} = \frac{\text{Fixed asset}}{\text{Total asset}}
\]

4. **Profitability**: return on asset (ROA) is the independent variables, it is proxy of the firm’s profitability and it computed as the following:

\[
\text{Return on Asset} = \frac{\text{Net sales}}{\text{total asset}}
\]

5. **Non Debt Tax Shield (NDTS)**: NDTs calculated as shown below was the independent variable.

\[
\text{Depreciation Ratio} = \frac{\text{Depreciation}}{\text{total assets}}
\]

6. **Liquidity**: in this study, current ratio (CR) is independent variables, it is proxy of the firm’s liquidity and it calculates as;

\[
\text{Current Ratio} = \frac{\text{current assets}}{\text{current liabilities}}
\]

Dummy Crisis: this study assumes that crisis occurred in 2008-2010 and takes value of 1 for mentioned period, while it accepts that no crisis in finance happed in these years 2005, 2006, and 2007, 2011-2017 and takes value of 0.

Table below is indicating all variables of the study.
Table 1: Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measurement</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leverage</td>
<td>Debt ratio= Total debt/ Total asset.</td>
<td>Lev</td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>The Natural Logarithm of Total Assets</td>
<td>Size</td>
</tr>
<tr>
<td>Growth</td>
<td>[(Sales$<em>t$ - Sales$</em>{t-1}$) / Sales$_{t-1}$]</td>
<td>Growth</td>
</tr>
<tr>
<td>Profitability</td>
<td>ROA = Net Income / Total Assets.</td>
<td>ROA</td>
</tr>
<tr>
<td>Tangibility</td>
<td>Tangibility= Fixed asset/ Total asset</td>
<td>Tan</td>
</tr>
<tr>
<td>Non Debt Tax Shield</td>
<td>Depreciation Ratio =Depreciation /total assets</td>
<td>NDTs</td>
</tr>
<tr>
<td>Debt Ratio</td>
<td>DR= Total Debt / Total Assets.</td>
<td>DR</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Current Ratio= current assets /current liabilities</td>
<td>CR</td>
</tr>
</tbody>
</table>

We can generalize equation (1) to write a dynamic panel model as (Flannery and Hankins, 2013):

$$ y_{it} = \alpha + \beta_1 y_{it-1} + \beta X_{it} + (v_{it} + u_{it}) $$

The study utilizes the below model:

$$ \text{Lev}_{it} = \beta_0 + \beta_1 \text{Tang}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{CR}_{it} + \beta_4 \text{NDTS}_{it} + \beta_5 \text{Growth}_{it} + \beta_6 \text{Size}_{it} + \beta_7 \text{Crisis}_{it} + \varepsilon_{it} $$
4. Results

The outcomes of the dissection like the impacts of financial crisis on capital structure are introduced below. The section including Lev, Tang, ROA, Growth, Size, CR, NDTS, and Crisis may be comprised of three parts as Descriptive Statistics, Correlation, and Dynamic Panel Data (GMM) Estimator.

4.1 Descriptive Statistics

Table 2: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lev</td>
<td>195</td>
<td>.01</td>
<td>.74</td>
<td>.2537</td>
<td>.14030</td>
</tr>
<tr>
<td>Tang</td>
<td>195</td>
<td>.00</td>
<td>5.06</td>
<td>.6577</td>
<td>.41275</td>
</tr>
<tr>
<td>ROA</td>
<td>195</td>
<td>-.03</td>
<td>1.27</td>
<td>.5552</td>
<td>.27643</td>
</tr>
<tr>
<td>Growth</td>
<td>195</td>
<td>-.30</td>
<td>1.76</td>
<td>.1117</td>
<td>.20231</td>
</tr>
<tr>
<td>Size</td>
<td>195</td>
<td>13.43</td>
<td>21.90</td>
<td>19.5659</td>
<td>1.68615</td>
</tr>
<tr>
<td>CR</td>
<td>195</td>
<td>.15</td>
<td>12.27</td>
<td>3.3055</td>
<td>2.19092</td>
</tr>
<tr>
<td>NDTS</td>
<td>195</td>
<td>.00</td>
<td>.07</td>
<td>.0374</td>
<td>.01092</td>
</tr>
<tr>
<td>Crisis</td>
<td>195</td>
<td>.00</td>
<td>1.00</td>
<td>.2308</td>
<td>.42241</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>195</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For a total of 195 observations in the time period of study from 2005 to 2017, the analysis has been summarized above table. The findings of the analysis show that leverage have a lowest of 0.01 and a highest of 0.74. The average of the sample is 0.2537 with standard deviation of 0.14030. The mean tangibility is 0.6577 with a standard deviation of 0.41275 minimum of 0.0 and maximum 5.06. It is found that return on assets has a mean value of 0.5552 with standard deviation of 0.27643. The growth ranges (-0.30 – 1.76) with the mean of 0.1117 with standard deviation of 0.20231. The size ranges from 13.43 to 21.90, the average of 19.57 with standard deviation of 1.68615. Current Ratio gave the highest value of standard deviation at 2.19092, indicating a wide variation in leverage among cement companies. At the same time CR provided the minimum value of 0.15 and the maximum 12.27, the average value of 3.3055. The NDTS
ranges from 0.00 to 0.07 with the average of 0.0374 with standard deviation of 0.01092. The crisis ranges from 0-1 and has a mean value 0.2308 with standard deviation of 0.42241.

4.2 Correlation Analysis

Table 3 shows the relationships for the greater part based on the computation of financial statements of 15 companies for the period of 2005-2017. It indicates that capital structure is associated with financial crisis for all variables under this study namely, Lev, Tang, ROA, Growth, Size, CR, NDTs and Crisis.

Table 3: Correlations

<table>
<thead>
<tr>
<th></th>
<th>Lev</th>
<th>Tang</th>
<th>ROA</th>
<th>Growth</th>
<th>Size</th>
<th>CR</th>
<th>NDTs</th>
<th>Crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lev</td>
<td>1</td>
<td>.019</td>
<td>-.336**</td>
<td>.140</td>
<td>.095</td>
<td>-.651**</td>
<td>-.223**</td>
<td>-.206**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.796</td>
<td>.000</td>
<td>.052</td>
<td>.187</td>
<td>.000</td>
<td>.002</td>
<td>.004</td>
</tr>
<tr>
<td>Tang</td>
<td>1</td>
<td>-.013</td>
<td>.076</td>
<td>-.041</td>
<td>-.024</td>
<td>-.121</td>
<td>.061</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.862</td>
<td>.293</td>
<td>.569</td>
<td>.743</td>
<td>.092</td>
<td>.401</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>1</td>
<td>.035</td>
<td>-.076</td>
<td>.206**</td>
<td>.396**</td>
<td>.125</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.625</td>
<td>.290</td>
<td>.004</td>
<td>.000</td>
<td>.081</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>1</td>
<td>-.014</td>
<td>-.112</td>
<td>-.022</td>
<td>-.289**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.849</td>
<td>.119</td>
<td>.762</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>1</td>
<td>-.010</td>
<td>-.075</td>
<td>-.063</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.891</td>
<td>.299</td>
<td>.384</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>1</td>
<td>.032</td>
<td>.138</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.656</td>
<td>.054</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NDTs</td>
<td>1</td>
<td>.121</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.092</td>
</tr>
<tr>
<td>Crisis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
The findings indicate that companies’ capital structure does not have significantly altogether through financial crisis. Additionally; the relationships between leverage and, CR, NDTS, ROA, Crisis are negative correlated due to significant links are seen among the dependent variables, while Size, Tang, Growth, and leverage have a positive correlation, as evaluated.

4.3. Dynamic Panel Data (GMM) Estimator

We utilize the dynamic panel approach or GMM model for the estimation of factors that may determine NPL over time as proposed by Holt-Eakin et al (1988) Arellano and Bond (1991). Using a series of instrument variables produced by lagged variables, we were able to solve the endogeneity problem in the independent variables.

GMM is a common method used in econometric theory to estimate parameters of economical and statistical models using an alternative technique instead of normal least square or maximum likelihood. First introduced in 1982 by Lars Hansen, it has found many applications in analysis of economic and financial data.

Advantages of GMM:

- GMM controls for endogeneity issue of lagged dependent variable using instrumental variables (IV): internal and external instruments
- Addresses the unobserved panel heterogeneity (individual effects)
- Reduces omitted variable bias in addition to the impact of measurement errors.

Limitations of GMM:

- More complicated compared to other panel models
- Possibility for manipulation
- Does not account for cross-sectional dependence (contemporaneous correlation). So, include time dummy into the model.
- Depends on the assumption that N is large. Not for long T panels. Use N >20.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>T-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDTS, it</td>
<td>-2.175**</td>
<td>-2.08</td>
<td></td>
</tr>
<tr>
<td>TANG, it</td>
<td>0.00399</td>
<td>1.48</td>
<td></td>
</tr>
<tr>
<td>ROA, it</td>
<td>-0.0837***</td>
<td>-2.52</td>
<td></td>
</tr>
<tr>
<td>Growth, it</td>
<td>0.0235</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>SIZE, it</td>
<td>0.00779*</td>
<td>1.79</td>
<td></td>
</tr>
<tr>
<td>CR, it</td>
<td>-0.0355***</td>
<td>-7.53</td>
<td></td>
</tr>
<tr>
<td>CRISIS</td>
<td>-0.00527</td>
<td>-0.29</td>
<td></td>
</tr>
<tr>
<td>const</td>
<td>0.342***</td>
<td>3.62</td>
<td></td>
</tr>
</tbody>
</table>

The result of the GMM estimation is shown in the table above. The table 4 indicates the findings of two-step system GMM. Our result indicates that the number of instrument variables is 13 against 17 groups, making our instrument valid. As a result of the AR (2) test given in table 4, null hypothesis is accepted due to p-value of AR (2) greater than 5 percent as well as there is no autocorrelation problem in the model. Hence when the result of Sargan test is examined; high p-value of sargan test (p=0.106 > 0.05) indicates that the instrumental variables are valid, in other words over identifying restrictions are valid in the model. Thus, the sargan test with a p-value above 5 percent fails to reject the null hypothesis.
5. Conclusion

This paper contributes to the existing literature by examining the financial leverage, i.e. the capital structure of cement firms in Turkey around financial crisis. The study evaluated a period of 2005 -2017 which is segregated as it accepts that crisis occurred in 2008-2010, same time there is no any financial crisis happened over these years 2005, 2006, 2007, 2011-2017. According to descriptive analysis, the leverage of the sample companies range from 1 % to 74%, with the average of about 25.37% with standard deviation 14.03%. Tangibility (Tan) shows a statistically positive and insignificant effect on leverage. With a coefficient of 0.00399, it indicates that one percent increase or decrease in Tan will lead to 3.99 percent increase or decrease in leverage of Cement companies. Leverage and ROA show negative correlation. A one-unit increase in ROA will reduce leverage by -0.0837. Bank’s liquidity measured current asset divide current liability a statistically negative and significant relationship with leverage. Similarly, a one–unit increase in liquidity will decrease the leverage by -0.0355. Our results also indicate a statistically positive effect growth on leverage. With a coefficient of 0.0235, it means that when growth increases by 1 percent, it will result in 2.35 percent increase in leverage. The present study suggests that if firm size increase by one unit, it will lead to increase to leverage by 0.7 percent. The result suggests a significant negative relationship between NDTS and Leverage. This means a unit increase in NDTS will decrease leverage by -2.175.

Also, the results express that firm size, growth, and Tang are positive associated with leverage while profitability, liquidity, NDTS, financial crisis and leverage are negatively connected. Lastly, the findings point to a declining trend in company debt ratios during the financial crisis. Hence, firms need to make some adjustments to the leverage of the firm to meet their need for equity and debt financing.
References


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