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Analysis of Factors Affecting The Service Demands Of Domestic Air Passengers



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Abstract

With the increase in urbanization, air transportation has become the most preferred mode of intercity transportation. In addition to the speed and comfort provided by airplanes, economic factors have become important in terms of service demand, especially for domestic airline passengers. This study investigates the economic factors affecting the demand for domestic air passengers in Türkiye. For this purpose, the number of domestic airline passengers was used as the dependent variable, and inflation, exchange rate, and economic growth were used as independent variables. In the analysis of the study, the short- and long-term relationships between the 2007Q1:2023Q4 quarterly time series and the variables was examined by the ARDL (Autoregressive Distributed Lag) bounds test method. The Granger Causality Analysis researched the causality between the number of domestic air passengers and economic factors. When the results of this study were evaluated, it was determined that economic growth and inflation positively affected the service demand of domestic airline passengers. The findings revealed that inflation is more important in affecting the demand for services. In the short-term forecast, all variables affected the demand for services. Because of the Granger Causality analysis, causality was determined only from domestic air passengers to the exchange rate.

Keywords



Air Transport · economic growth · exchange rate · inflation · passenger demand · ARDL · Granger Causality

Author Note


This article was derived from his master's thesis titled "Investigation of the Factors Affecting Airline Passengers' demands to Purchase Services.



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Analysis of Factors Affecting The Service Demands Of Domestic Air Passengers

In many parts of the world, people want to buy air freight services because it is the fastest way to get from one place to another. Air travel attracts a lot of attention from people today because it offers the opportunity to travel quickly and safely from one point to another. This interest can turn into buying tickets from airlines over time. However, passengers encounter economic and other factors specific to airlines when purchasing tickets. These emerging factors affect citizens living in Türkiye (domestic passengers) differently and citizens living abroad (international passengers) differently. Therefore, the importance of air transport for a country cannot be denied.

Air transportation is an significant means of transportation today because it facilitates the movement of transportation within a country and connects one region to another (Akinyemi, 2019). The airline transportation sector, which enables a person or an item to be quickly and reliably transported from one place to another, has become the most preferred transportation sector by people today. Due to the increasing global mobility in recent years, the air transport sector has developed significantly and accelerated transportation (Öcal, 2021). Both in the world and in Türkiye, air transportation has made rapid progress due to technological developments and continues to do so. Due to the increasing speed and mobility of transportation, the air-transportation sector has started to be preferred by people over other sectors. For this reason, it is important to know in advance the domestic and international travel demands, the service purchases of the passengers, and how they may change over time (Koç and Arslan, 2018). Because of the benefits provided by air transport, there is a continuous increase in the demand for aviation. Factors affecting airline selection, demand, and passengers' purchasing decisions are complex (Efendigil and Eminler, 2017). In this context, the study sought answers to the following questions. How does the exchange rate affect the demand for services by domestic passengers in the long and short term? How does economic growth affect domestic passengers' long- and short-term demand for services? How does inflation affect domestic passengers' long- and short-term demand for services?

Therefore, in this work, the external factors affecting the service demands of domestic passengers in air transport in Türkiyewill be examined with 2007Q1:2023Q4 quarterly data. The purpose of this work is to examine the extent of the link between the variables of the number of domestic passengers using an airline, exchange rate, economic growth, and inflation. Although various studies have been conducted on the factors affecting air transportation demands in the literature, it has been determined that domestic flights are not given much importance, and relatively less importance is given to the Turkish aviation sector. Therefore, this study on the Turkish aviation sector is anticipated to contribute to the literature. In contrast to the studies conducted, the effects on domestic passengers were examined more comprehensively. This study is important as it will contribute to filling the gap in the literature by examining the short- and long-term impacts of inflation, exchange rate, and economic growth on the demand for domestic airline passengers. In particular, this study attempts to determine the impact of the inflationary environment on the aviation sector. In this context, the authors have tried to contribute to the literature by presenting a more original study.

The second part of the work consists of the literature review, the third part consists of the methods and findings, and the last part consists of the results obtained in the analysis.

Literature Review

When the literature is examined, it is seen that the studies examining the economic factors affecting the service demand of domestic passengers are limited. Therefore, this study examines the complex relationship between domestic passenger demand and macroeconomic factors, such as inflation, exchange rate fluctuations, and economic growth. This study expands the existing knowledge in this field by shedding light on the effects of macroeconomic variables on the dynamics of the aviation sector. This approach aims to contribute significantly to the aviation economics literature by providing an innovative perspective. In this context, the reviewed literature is as follows;

In their study, Abed et al. (2001) aimed to conduct an econometric analysis of the factors influencing the demand for international air transport in Saudi Arabia using data between 1971 and 1992. The progressive regression method was used in this study. Because of this study, we determined that the primary determinants of international air travel in Saudi Arabia are population size and total expenditures. Marazzo et al. In their study, et al. (2010) examined the connection between GDP and airline passenger demand in Brazil based on the years 1966 to 2006. In the study, the Johansen cointegration test and Granger causality test were first used. Because of this work, it was revealed that GDP has a strong positive effect on the number of airline passengers, whereas airline passenger growth has a smaller effect on GDP. Chi (2014) examined the short- and long-term effects of the number of passengers, GDP, exchange rate, and 09/11 attacks on international travel demand to and from the US, taking into account quarterly data for the period 1996Q1-2012Q4. In the work in which the ARDL test and Granger causality test were performed, the number of passengers was used as the dependent variable. Because of the study, a strong link was observed between the demand for international air travel and economic growth. The results revealed that the real exchange rate has comparatively little impact on reciprocal air travel flows. Valdes (2015) used data from 2002 to 2008 to examine the factors affecting the air travel demands of middle-income countries. In this study, both static and dynamic panel data models covering 32 countries were used. The total number of passengers, GDP, foreign direct investment, inflation, the real exchange rate, and the jet fuel prices were used as variables in this work. The consequences of this study revealed that the increase in GDP and foreign direct investment has a positive impact on airline demand, and there is a negative relationship between inflation, jet fuel prices, and airline demand. Brida and Bukstein (2016) analyzed the correlation between economic growth and air transport in Italy using data from 1971 to 2012 as a contributor to the factors affecting passenger demand. Cointegration and Granger Causality analysis were used in the study, and as a consequence, a positive relationship was found between the series in the long term as a consequence of the Cointegration test. In addition, the results of the causality analysis revealed the existence of a one-way causality relationship between air transport and GDP. In this work, Suryan (2017) determined the factors affecting the number of airline passengers in Indonesia by using data from 1970 to 2017. In this study, time series regression was applied using GDP, population, and exchange rate variables, and the panel data regression technique was applied using GDP and population variables. Because of the study, it was determined that the exchange rate did not affect the number of passengers, but the population was little affected. It turns out that GDP is an important factor in the number of passengers. Albayrak et al. (2020) analyzed panel data using data between 2004 and 2014 to examine the demand for airline passengers in Türkiye in 47 provinces and 52 airports. Because of this work, it was found that GDP per capita had a statistically important and positive impact on airline passenger demand.

Table 1
Literature Summary

Writer	Country	Purpose	Data Set	Method	Result
Fernandes and Pacheco (2010)	Brazil	The study examined the causal relation between economic growth and air passenger	1996-2006	Granger Causality Analysis	A one-way causality relation was found between GDP and passenger demand.
Baikgaki and Daw (2013)	South Africa	Examining the factors that determine demand for domestic airlines	1971-2012	Multiple Regression Model	The increase in GDP, population, consumption, and oil prices positively impacted airline demand.
Brida et al. (2014)	Mexico	Examining the connection between air transport and GDP	1995-2013	Co-integration and Granger Causality test	In the long term, it has been determined that there is a nonlinear relationship between GDP and the number of air passengers. In addition, a two-way causality relationship was obtained from the Granger causality findings.
Hu et al. (2015)	29 provinces in China	Examining the relationship between domestic passenger demand and growth.	2006Q1-2012Q3	Granger Causality Test	A bidirectional causal relationship was found between economic growth and air travel demand.
Sofany (2016)	Ethiopia	To analyze the connection between inflation, domestic passenger demand and the number of domestic passengers, GDP and population,.	2000-2014	ARDL: Abdominal magnetic resonance imaging	Because of the analysis, a positive relationship was found between airline demand and the variables.
Kıracı (2017)	Türkiye	Investigating the relationship between economic growth and airline demands	1960-2015	Toda-Yamamoto causality and Hatami-J asymmetric causality analysis	It has been revealed a important causal relation between airline demand and economic growth.
Eren, Eryer, and Eryer (2020)	Türkiye	Examining the relationship between passenger demand and GDP	1980-2018	Johansen Co-integration and Granger Causality Test	Although there is a long-term positive relation between GDP and demand for the number of airline passengers, a one-way causality relation between GDP and demand for the number of airline passengers.
Ali et al. (2023)	BRIC Countries	To examine the relation between air passenger and economic growth	1993-2019	Panel Data Analysis	Because of the analysis, a one-way relationship was found between air transportation and economic growth, and a one-way relationship was found between air passengers and air transportation.
Eryer (2024)	Five fragile countries	To examine the relationship between economic growth and air passenger transport	2005-2021	time series, cross-sectional, and panel data analyses	In the said period, it was concluded that the number of airline passengers in the Fragile Five countries impacted the increasing economic growth.
Uçar, Ülger, and Atamer (2024)	BRICS-T Countries	Examining the possible effects of air transport on economic growth	1993-2021	Least Squares Method	This shows that the amount of cargo transported by air in BRICS-T countries has a positive impact on economic growth, whereas the number of passengers transported by air has a negative effect.

Methods and Data

In this study, exogenous factors affecting the service demands of domestic passengers in Türkiye were examined for the period 2007-2023. This analysis analyzes the relationship between economic growth, the exchange rate, and inflation of domestic passengers using the airline in Türkiye. The Eviews program was used in the study and the ARDL (Autoregressive Distributed Lag Bound Test) method was selected from the econometric methods. In this context, long-term and short-term coefficient estimations, F bounds tests, autocorrelation LM tests, variable variance tests, and CUSUM and CUSUM Q tests were performed on the variables. In addition, whether there was a connection between the variables was assessed using the Granger Causality test.

ARDL (Autoregressive Distributed Lag Bound Test) is a test used to reveal the existence of cointegration between variables and reveals that there is a stationary combination of at least two series that are observed to be non-stationary at their level. In short, it allows us to analyze short- and long-term causal relationships. The advantage of this model over other models is that a series whose co-integration relationship is investigated does not need to be quite static. In other words, the ARDL bounds testing approach allows the creation of the desired model and the realization of stable levels at $I(0)$ and $I(1)$ (Işık, 2015). ARDL is more productive than other cointegration tests and provides better performance for smaller sample sizes (Akiyemi, 2019).

The equation used in this study is the one in which the effect on the number of domestic passengers is examined. Inflation, economic growth, and exchange rate variables, which are determined as independent variables on the number of domestic passengers as dependent variables, are examined, and the relationship between them is revealed. The equation created for the analysis is as follows;

$$\begin{aligned} \Delta passenger = \alpha_0 + \beta_0 + \sum_{i=1}^m \beta_{1i} \Delta passenger_{t-1} + \sum_{i=1}^m \beta_{2i} \Delta \ln inflation_{t-1} \\ + \sum_{i=0}^m \beta_{3i} \Delta \ln foreignexchange_{t-1} + \sum_{i=1}^m \beta_{4i} \Delta growth_{t-1} + \mu_t \end{aligned} \quad (1)$$

The quarterly data for the period 2007-2023 were used in the work. The reason this study started in 2007 is that the effects of the economic crisis experienced during that period were not intended to be reflected in the data. The sample group of the study comprises the number of passengers received from the State Airports Authority (DHMI), the economic growth and inflation rates acquired from the Turkish Statistical Institute (TurkStat), and the exchange rate from the Central Bank of the Republic of Türkiye (CBRT). The data received were used in an inflation-adjusted manner.

Table 2

Data Definition and Sources

Variable	Definition	Source
Passenger	Number of Domestic Passengers	DHMI Statistics
Inflation	Inflation	Turkish Statistical Institute
Foreign currency	Dollar-Based Exchange Rate	CBRT
Growth	Economic Growth	Turkish Statistical Institute

According to the table above, from the variables; The passenger variable refers to the number of domestic passengers, the inflation variable refers to the inflation rate, the foreign exchange variable refers to the exchange rate, and finally, the Growth variable refers to the economic growth rates. The data were taken from the databases of the State Airports Authority, Turkish Statistical Institute, and Central Bank of the Republic of Türkiye.

When the literature is examined, Marazzo (2010), Fernandes and Pacheco (2010), Kiracı (2017), and Eren et al. (2020) examined the impact of the economic growth variable on passenger demand, Chi (2014) and Suryan (2017) examined the impact of the exchange rate variable on passenger demand, and Valdes (2015) examined the impact of the inflation variable on passenger demand.

Analysis and Data

In this section, the combinations of ADF (Augmented Dickey-Fuller) unit root test consequences applied to variables as trending, non-trending, and constant are given. The ADF unit root test is used serially to determine what difference the time series is stationary after if it is not stationary at the level value, eliminating spurious regression. As a consequence of the fact that some variables in the model were not stationary, the first differences of the non-stationary data were taken, and the result of the ADF unit root test performed at the first difference level was given. Then, the F boundary test, Autocorrelation LM test, Variable variance test, Ramsey Reset test, CUSUM, and CUSUM Q test tests were performed on the variables. The results are given below.

In the first stage of the unit root test, the ADF unit root test was applied to the variables in the model. The consequences are presented in Table 3. The ADF unit root test was performed using three alternative models: trending, non-trending, and constant. At this stage, the difference between the variables is not considered.

Table 3
ADF Unit Root Test Results

Variable	Intersection point	Trend and intersection points	Nobody
Passenger	-3.941644*	-3.979853**	-0.681168
Inflation	-0.393041	-1966260	-0.886984
Foreign currency	3218661	-0.147791	6008238
Growth	-3.923943*	-3.911714**	-2.741497*

Note: *, **, and *** indicate importance at 1%, 5%, and 10%, respectively.

It is necessary to ensure that the series is stationary because of the appearance of a spurious regression problem in non-stationary series. At this stage, it was determined that passenger and economic growth variables are stationary at the 1% importance level, whereas inflation and exchange variables are not stationary. For this reason, the stationarity of the variables was tested by considering the first-degree difference. The test results are given in Table 4.

Table 4

Variable	Intersection point	Trend and intersection points	Nobody
Passenger	-36.48765*	-36.16351*	-36.79617*
Inflation	-6.954679*	-7.046716*	-6.886338*
Foreign currency	-6.484408*	-7.336469*	-5.132810*
Growth	-9.909559*	-9.832011*	-9.987957*

Note: *, **, and *** indicate importance at 1%, 5%, and 10%, respectively.

From the data used in this study, the variables of number of passengers and economic growth remain constant at this level, while inflation and foreign exchange variables remain constant at the 1st difference. This shows that the ARDL model can be applied to examine cointegration relationships (Akkaya, 2018). After Unit Root Tests, the ARDL model was established by selecting the Automatic Selection option. The Akaike criterion was selected for the model, the lag length was determined as 4, and the most appropriate lag length was ARDL (4,2,0,4).



The autocorrelation LM test results are presented in Table 5. Considering the results obtained, it can be seen that there is no autocorrelation problem in the forecasted model.

Table 5
Autocorrelation LM Test

<i>F Statistics</i>	9.350	<i>Probability</i>	0.8795
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Table 6 shows the results of the Variable Variance Test. Considering the results obtained, it is seen that there is no variance problem in the estimated model.

Table 6
Breusch-Pagan Godfrey Variable Test of Variance

<i>F Statistics</i>	1.291	<i>Probability</i>	0.2475
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Table 7 shows the Ramsey Reset Test results. In light of the results obtained, no errors were observed in the model setup.

Table 7
Ramsey Reset Test

	<i>Value</i>	<i>Df</i>	<i>Probability</i>
<i>T-statistic</i>	0.213	47	0.8320
<i>F-statistic</i>	0.054	-1,47	0.8320
<i>Probability Ratio</i>	0.060	1	0.8050

The probability values in Table 7 revealed that the probability values of the T and F tests were statistically important at the 10% level. These results support the decision that the exponential variables in the model have no effect on the dependent variable and that it is appropriate to construct the model in linear form.

Table 8 presents the diagnostic statistics of the model, and the R-squared statistical value is 0.93. The fact that the model has this value proves that the linear span power is quite high. The probe (F-statistic) value is less than 0.05. Therefore, the model as a whole turns out to be meaningful. The Durbin-Watson probability value was calculated as 1.92, which is close to 2. This shows that the model does not have an autocorrelation problem.

Table 8
Diagnostic Statistics of the Model

<i>R-squared</i>	0,931	<i>Corrected R-squared</i>	0.896
<i>Sum of Error Squares</i>	3307	<i>Schwarz Criterion</i>	1.337
<i>F-statistic</i>	26639	<i>Hannan-Quinn Criterion</i>	0.883
<i>Probability (F-statistic)</i>	0.000	<i>Durbin-Watson Statistic</i>	1.926

The “k” in Table 9 refers to the number of independent variables. When we look at the F statistical value, which is 9.350, it is seen that it is above both the lower limit and the upper limit at the 1%, 5%, and 10% significance levels. These results support the entity of a co-integration association and reveal the entity of a long-term relationship in the predicted model.

Table 9
F Boundary Test Results

<i>F-statistic</i>	<i>k</i>	<i>Meaningful</i>	<i>I(0)</i>	<i>I(1)</i>
9350	4	%1	2.57	3.68
		%5	3.06	4.27



<i>F</i> -statistic	<i>k</i>	Meaningful	<i>I</i> (0)	<i>I</i> (1)
		%10	4.18	5.56

Because the model has a co-integration relationship, short- and long-term relationships can be predicted.

In this section, the long-term forecast results of the ARDL model are given in Table 10. Variable passengers (number of domestic passengers) are the dependent variables, while inflation, foreign exchange, and growth are the independent variables.

Table 10

Long-Term Relationshi Prediction Results

Variable	Coefficient	Std. Error	T-Statistic	Probability
<i>Inflation</i>	0.106	0.060	7.768	0.083***
<i>Foreign currency</i>	-0.063	0.048	-1.131	0.195
<i>Growth</i>	0.011	0.004	2.360	0.020**

Note: *, **, and *** indicate importance at 1%, 5%, and 10%, respectively.

According to the long-term forecasts presented in Table 10, economic growth is statistically significant, with a positive and critical value of 5%. In other words, an economic growth of 1% increases 0.01% in domestic passenger demand. On the other hand, it was noticed that the inflation variable was significant at a critical value of 10%. Based on this information, an inflation increase of 1% can be said to increase domestic passenger demand by 0.10%. There is no important relationship between currency variables. In other words, the currency variable has no impact on passenger demand in the long term. The exchange rate increase does not affect passenger demand in the long term. In this regard, passenger demand does not react to the exchange rate variable in the long term. In other words, the floating exchange rate does not have any impact on passenger demand.

After the long-term coefficient estimation, the short-term coefficient estimation was performed by adding the error term to the model. The results are given in Table 11.

Table 11

Short-Term Relationship Prediction Results

Variable	Coefficient	Std. Error	T-Statistic	Probability
<i>Inflation</i>	-0.460	0.153	-2.993	0.004*
<i>Foreign currency</i>	1.479	0.585	2.529	0.014**
<i>Growth</i>	-0.022	0.008	-2.672	0.010**
<i>CointEq(-1)</i>	-2.564	0.360	-7.116	0.000
<i>C</i>	0.682	0.101	6.716	0.000

Note: *, **, and *** indicate importance at 1%, 5%, and 10%, respectively.

According to the error correction regression model, ContEq(-1) is negative and significant at 2.564. In the short term, a important relationship was found between domestic passenger demand, which is the dependent variable, and inflation, foreign exchange, and economic growth, which are the independent variables. A 1% increase in inflation will reduce passenger demand by 0.46%, whereas a 1% increase in the currency variable will increase passenger demand by 1.47%. At the same time, it turns out that a 1% increase in economic growth will reduce passenger demand by 0.02%. Contrary to expectations, the exchange rate increase did not adversely affect passenger demand but followed a positive course. In this context, it was evident that the passengers were not very sensitive to the increase in foreign currency. Although inflation negatively

affects passenger demand in the short term, it has been shown that the purchasing power of passengers increases as revenues increase, with its positive effect in the long term.

CUSUM and Q tests were performed to examine the continuity of the variable coefficients used in the model.

Figure 1
CUSUM Test

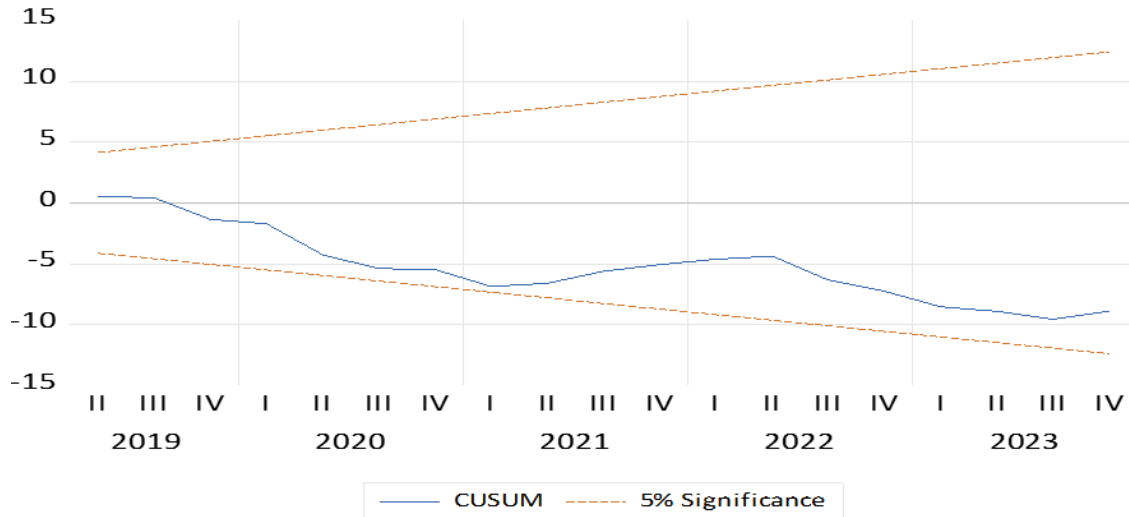


Figure 1 The ratio of error term totals to standard deviation remains below the critical value limit of 5% during the CUSUM test estimation period. This notation reveals that the coefficients are stable.

The structural fracture occurred in the CUSUM Q test. The pandemic crisis between 2019 and 2021 greatly affected the aviation industry. Because of these restrictions, the number of passengers using the airline has sharply decreased. Therefore, there was a break in the analysis due to the data for that period. To eliminate the existence of structural breakage, a dummy variable was added to the model for the 2019:Q1-2021:Q1 periods, which cover the pandemic period. After adding the dummy variable, the CUSUM Q test was performed again, and the results are presented in Figure 2.

Figure 2
CUSUM Q Test

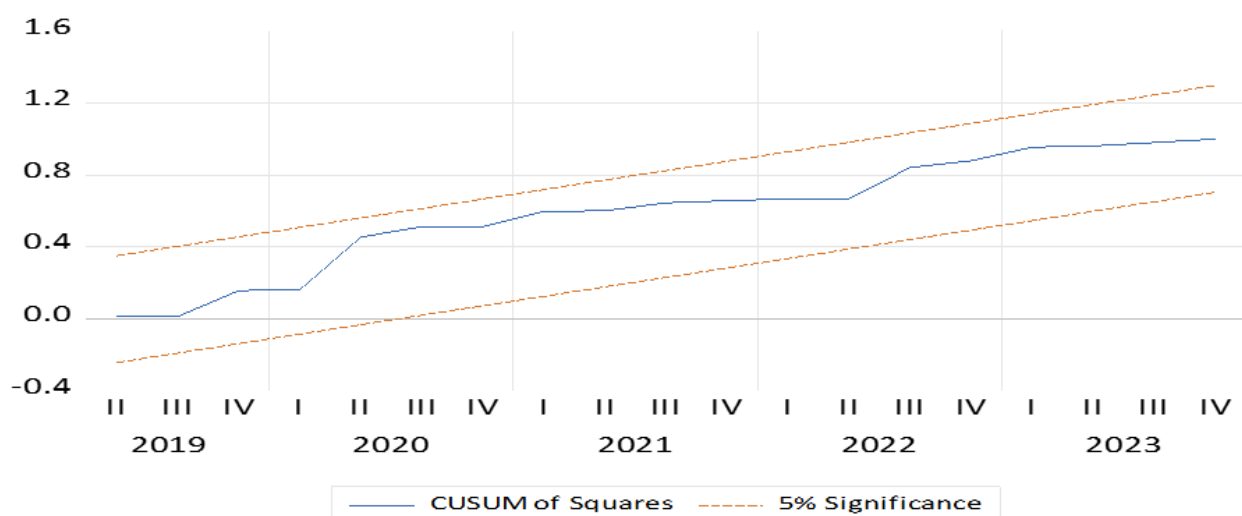


Figure 2 shows that the variance of the total squares of the error terms in the estimation period of the CUSUM Q test with the dummy variable is within the critical value limits of 5%. This notation reveals that the coefficients are stable.

Because of the tests, the existence of a co-integration correlation between the variables was determined, and therefore the Granger causality test was applied. The results of the Granger Causality test are presented in Table 12.

Table 12

Granger Causality Test Results

	<i>F Statistics</i>	<i>Probability</i>
<i>Enf-Passenger</i>	0.716	0.638
<i>Passenger-Enf</i>	0.827	0.554
<i>Dvz-Passenger</i>	0.416	0.864
<i>Passenger-Dvz</i>	3.916	0.002*
<i>Growth-Passenger</i>	1.593	0.169
<i>Passenger Growth</i>	0.878	0.518

Note: *, **, and *** indicate importance at 1%, 5%, and 10%, respectively.

According to Table 4.10, the relationship between inflation and domestic passenger demand is not due to Granger. Likewise, the cause of inflation is not domestic passenger demand. In this context, there is no bidirectional causality between inflation and domestic passenger demand. Although the relationship between foreign currency and domestic passenger demand shows that there is no Granger reason, the relationship between foreign currency and domestic passenger demand reveals that this is the Granger reason. In other words, a one-sided causal relationship between the exchange rate and domestic passenger demand. The increasing number of passengers increases the company's sales revenues, and it is thought that this situation is reflected in the company as foreign currency.

Conclusions and Discussions

In this study, using the 2007Q1:2023Q4 quarter data, the exogenous factors affecting passenger purchasing demands in air passenger transportation in Türkiye were examined. This study investigates the scope of the relationship between the number of domestic passengers using the airline, exchange rate, economic growth, and inflation variables. The effects of the determined external factors on the number of passengers were examined using the ARDL model. Granger causality tests were then performed to observe causality between variables. The analysis started with the ADF unit root test to determine the stationarity levels of the variables, and after the stationarity of the variables was tested, the F boundary test, Autocorrelation LM test, Variable variance test, Ramsey Reset test, and CUSUM and CUSUM Q test tests were performed. After the variables passed the tests, the long-term and short-term coefficients between the variables were examined. Finally, the causality relationship between each other was investigated using Granger causality analysis.

When the result of the analysis was examined, the entity of a long-term relationship in the model was accepted. Accordingly, the findings indicate that economic growth is statistically significant at a positive and critical value of 5%. In other words, a 1% rise in economic growth results in a 0.01% rise in domestic passenger demand. On the other hand, the inflation variable was significant at a critical value of 10%. In this way, an inflation increase of 1% can be said to increase domestic passenger demand by 0.10%. There is no important relationship between currency variables. In other words, the currency variable has no impact on passenger demand in the long run. In the short run, a important relationship was found between the dependent variable and the independent variables, inflation, foreign exchange, and economic growth. A 1%

increase in inflation will reduce passenger demand by 0.46%, whereas a 1% rise in the currency variable will rise passenger demand by 1.47%. At the same time, it turns out that a 1% increase in economic growth will reduce passenger demand by 0.02%. Because of the Granger Causality analysis, inflation and domestic passenger demand are not Granger causes of each other. It turns out that the reason for Granger is the relationship between foreign Exchange and domestic passenger demand.. When we look at the economic growth variable, there is no causality relationship between economic growth and domestic passenger demand.

The findings show that inflation, which is one of the factors affecting the purchasing demands of airline passengers, has a positive impact on domestic passenger demand in the long term and a negative impact on it in the short term. It has been shown that this situation reduces the purchasing power of passengers in the short term, and in the long term, it decreases as revenues increase. At the same time, economic growth and exchange rates affect domestic passenger demand. As a consequence of the analysis, it has been determined that inflation affects domestic passenger demand more than economic growth in both the long and short term, while foreign exchange affects it more than the other two variables only in the short term. However, this effect did not reduce passenger demand. This revealed that the passenger was not very sensitive to foreign currency.

As a consequence of the literature review, inflation, economic growth, and the exchange rate, which are among the independent variables considered in terms of whether they affect passenger demand, were also examined in different studies. In this context, Hu et al. (2015) observed a long-run relationship between passenger demand and economic growth, while Chi (2014) observed a strong link between economic growth and demand for international air travel, but found that the exchange rate had relatively little effect on the demand for air travel. In his study, Öcal (2021) found that the exchange rate and economic growth have a positive impact on air transport. Valdes (2015), however, revealed the existence of a negative link between inflation, which he used as an independent variable, and passenger demand. In addition to these studies, the findings of this study are relatively similar. In this study, the effects of inflation, exchange rate, and economic growth affect the long- and short-term purchasing demands of domestic passengers. This result is also supported by other studies.

Based on this article, which examines the external factors affecting the purchasing demands of airline passengers in Türkiye, a study on internal factors can be conducted in other articles on this subject. In addition, a different perspective can be provided by changing the variables and analysis method on the same subject, and a contribution can be made to the Turkish aviation industry in line with the analysis. In addition, the study used data from all years, but no seasonal distinction was made. In this context, researchers may be advised to analyze changes in domestic or external demand in summer and winter by making seasonal adjustments.



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References

- Abed, S. Y., Ba-Fâfîl, A. O., and Jasimuddin, S. M. (2001). An Econometric Analysis of the Demand for International Air Travel in Saudi Arabia. *Journal of Air Transport Management*, 7(3), 143-148.
- Akinyemi, Y. C. (2019). Determinants of Demand for Domestic Air Travel in Nigeria: Cointegration and Causality Analysis. *GeoJournal*, 84(5), 1239/1256.
- Akkaya, M. (2018). Türk Lirası Referans Faiz Oranı'nı (TRLIBOR) Etkileyen Makroekonomik Faktörlerin Analizi. *Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 8(2), 179-197.
- Albayrak, M. B. K., Özcan, İ. Ç., Can, R. and Dobruszkes, F. (2020). Determinants of Air Passenger Traffic at Turkish Airports. *Journal of Air Transport Management*, 86, 101818.
- Ali, R., Bakhsh, K., & Yasin, M. A. (2023). Causal nexus between air transportation and economic growth in BRICS countries. *J Air Transport Management*, 107, 102335.
- Baikgaki, O. A. (2014). Determinants of Domestic Air Passenger Demand in The Republic of South Africa. *Doctoral Dissertation*.
- Brida, G., Lanzilotta, B., Brindis, M., & Rodríguez-Collazo S. (2014). The long-term relationship between economic growth and passenger air transport in Mexico. *Serie DT (14/04)*;
- Brida, J. G., Bukstein, D., & Zapata-Aguirre S. (2016). The dynamic relationship between air transport and economic growth in Italy: a time series analysis. *International Journal of Aviation Management*, 3(1), 52-67.
- Chi, J. (2014). Co-integration Analysis of Bilateral Air Travel Flows: The Case of International Travel to and from the United States. *Journal of Air Transport Management*, 39, 41/47.
- Efendîgil, T., & Eminler, Ö. E. (2017). Havacılık Sektöründe Talep Tahminin Önemi: Yolcu Talebi Üzerine Bir Tahmin Modeli. *Yaşar Üniversitesi E-Dergisi*, 12, 14-30.
- Eren, A. S., Eryer, A., & Eryer, S. (2020). Havayolu Taşımacılığı ve Ekonomik Büyüme İlişkisinin İncelenmesi Türkiye Örneği: Ampirik Bir Analiz. *Uluslararası Sosyal Bilimler ve Eğitim Dergisi*, 2(3), 236-257.
- Eryer, A. (2024). Havayolu Taşımacılığının Ekonomik Büyüme Üzerine Etkisi: Kırılgan Beşli Örneği. *Equinox Journal of Economics Business and Political Studies*, 11(1), 24-37.
- Fernandes, E. and Pacheco, R. R. (2010). Causal Relationship between GDP and Domestic Air Passenger Traffic in Brazil. *Transportation Planning and Technology*, 33(7), 569-581.
- Hu, Y., Xiao, J., Deng, Y., Xiao, Y., and Wang, S. (2015). Domestic Passenger Traffic and Economic Growth in China: Evidence from Heterogeneous Panel Models. *Journal of Air Transport Management*, 42, 95/100.
- İşik, C. (2015). Turizmde Otel Oda Fiyatı, Kişi Başı Gsyih ve Havaalanlarındaki İç Hat Yolcularının Otel Oda Talebine Etkisi: Ardl Sınır Testi Yaklaşımı. *Kafkas Üniversitesi Sosyal Bilimler Enstitüsü*, (16), 165-176.



- Kıracı, K. (2017). Havayolu Taşımacılığı ile Ekonomik Büyüme Arasındaki Nedensellik Analizi: Türkiye Üzerine Ampirik Bir Uygulama. *Dokuz Eylül Üniversitesi İktisadi İdari Bilimler Fakültesi Dergisi*, 33(1), 197-216.
- Koç, İ., & Arslan, E. (2018, Ekim). Türkiye'de Yurtiçi Hava Taşımacılığında Yapay Sinir Ağları ile Talep Tahmini. 2018'de 6. Uluslararası Kontrol Mühendisliği ve Bilişim Teknolojileri Konferansı (CEIT)
- Marazzo, M., Scherre, R. and Fernandes, E. (2010). Air Transport Demand and Economic Growth in Brazil: A Time Series Analysis. *Transport Research Part E: Logistics and Transport Review*, 46(2), 261/269.
- Öcal, O. (2021). Hava Yolu Taşımacılığı Yolcu Sayısını Etkileyen Faktörler. *Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi*, 11(4), 2120-2130.
- Sofany, A. (2016). The Determinants of Domestic Air Transport Demand in Ethiopia. *Unpublished Master's Dissertation, Addis Ababa University*.
- Suryan, V. (2017). Econometric Forecasting Models for Indonesian Air Traffic Passengers. *Volume in the Journal of the Civil Engineering Forum* (Volume 3, Issue 1).
- Uçar, M., Ülger, M., & Atamer, M. A. (2024). Havayolu taşımacılığı ile ekonomik büyüme arasındaki dinamik ilişki: BRICS-T ülkeleri örneği. *Fiscaoeconomia*, 8(1), 149-168.
- Valdes, V. (2015). Determinants of air travel demand in middle-income countries. *Journal of Air Transport Management*, 42, 75/84.