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**CORONAVIRUS PANDEMIC'S IMPACT ON TOURISM
AND CURRENT ACCOUNT DEFICT IN TURKEY**

MASTER THESIS

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ABSTRACT**Master Thesis****Coronavirus Pandemic's Impact on Tourism and Current Account Deficit in
Turkey****Muhammad Mansur KABIR****Firat University****The Institute of Social Sciences****Economics Department****Elazığ-2021; Page: IX+38**

Tourism plays a major role in financing Turkey's current account deficits, the study sought to determine whether Turkey can meet its 2023 tourism goals of 75 million visitors by 2023 and when tourism levels will return to pre-pandemic levels. The study analysed monthly visitor arrival data from January 2007 through May 2021. The first forecast covered the period from January 2007 to February 2020, but did not include the epidemic period. A second forecast covering the pandemic period was conducted from January 2007 to May 2021. The seasonal ARIMA autoregressive integrated moving average (SARIMA) model was used to make forecasts. Turkey would have reached its goal of 75 million tourists by 2022, a year sooner than expected, but due to the coronavirus pandemic, it would miss its 2023 tourism plan by 4 to 5 years, and tourism levels will not recover pre-pandemic levels until 2035, a 15-year gap. The strength of the findings in this study is dependent on the continuation of the coronavirus pandemic; nevertheless, with the introduction of vaccinations, tourism may return to normal levels; nonetheless, with the emergence of new coronavirus variants, the future of travel appears uncertain.

Keywords: Current Account Deficit, Coronavirus pandemic, Tourism.

ÖZET**Yüksek Lisans Tezi****Korona Virüs Pandemisinin Türkiye’de Turizm ve Cari Açık Üzerindeki Etkileri****Muhammad Mansur KABIR****Fırat Üniversitesi****Sosyal Bilimler Enstitüsü****İktisat Anabilim Dalı****Elazığ-2021; Sayfa: IX+38**

Bu çalışmada, pandemi döneminde turizmin Türkiye'nin cari açıkları üzerindeki etkisi nedeniyle, Türkiye'nin 2023 turizm hedeflerinden biri olan 2023 yılına kadar 75 milyon ziyaretçi sayısına ulaşp ulaşamayacağı ve turizm seviyelerinin pandemi öncesi seviyelere ne zaman döneceği belirlenmeye çalışılmıştır. Çalışma, Ocak 2007'den Mayıs 2021'e kadar aylık ziyaretçi verilerini analiz etmiştir. İlk tahmin, Ocak 2007'den Şubat 2020'ye kadar pandeminin olmadığı dönemi kapsamaktadır. Pandemi dönemini kapsayan ikinci bir tahmin ise Ocak 2007'den Mayıs 2021'e kadar yapılmıştır. Tahminlerin oluşturulması için mevsimsel ARIMA otoregresif entegre hareketli ortalama (SARIMA) modeli kullanılmıştır. Türkiye, 75 milyon turist hedefine 2022 yılına kadar planlanan tarihten bir yıl önce ulaşmış olabileceken, koronavirüs pandemisi nedeniyle 2023 turizm planının 4 ila 5 yıl erteleneceği ve turizm seviyelerinin pandemi öncesi seviyelerine kadar gerileyeceği düşünülmektedir. Bu çalışmanın bulgularının önemi, koronavirüs pandemisinin devam etmesine bağlı olmakla birlikte, aşılarda devreye girmesiyle turizm sektörünün normal seviyelerine dönebileceği düşünülmektedir. Ancak yeni koronavirüs varyantlarının ortaya çıkmasıyla birlikte seyahatlerin geleceğinin belirsiz olduğu görülmektedir.

Anahtar Kelimeler: Cari Açık, Coronavirüs pandemisi, Turizm.

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ÖNSÖZ

Turizm, Türkiye'de büyümeyi hızlandırmaya ve Türkiye'deki cari açığı azaltmaya yardımcı olabilir. 2020 yılının başında koronavirüs pandemisi başladığında seyahat kısıtlandı ve tüm dünyada turizm sektörü durduruldu. Turizm pandemi öncesi döneme dönmediğinden, bu araştırma turizmin Türkiye'deki cari açık üzerinde nasıl bir etkisi olduğunu ve Türkiye'nin 2023 turizm hedeflerine nasıl ulaşılması gerektiğini görmek içindi. Bu araştırma, pandeminin Türkiye'nin 2023 turizm stratejisi hedeflerinin fizibilitesini ne kadar etkilediğini ve pandemi öncesi seviyeye dönmesinin ne kadar süreceğini öğrenmek amacıyla yapılmıştır.

ELAZIĞ-2021**Muhammad Mansur KABİR**

ABBREVIATION AND SYMBOLS

ACF	: Autocorrelation Function
ADF	: Augmented Dickey-Fuller
AIC	: Akaike Information Criterion
ARIMA	: Autoregressive integrated moving average
PACF	: Partial Autocorrelation Function
RMSE	: Root Mean Square Error
S.E	: Standard Error
SARIMA	: Seasonal Autoregressive integrated moving average
UNWTO	: United Nations World Tourism Organization
WHO	: World Health Organization

CHAPTER ONE

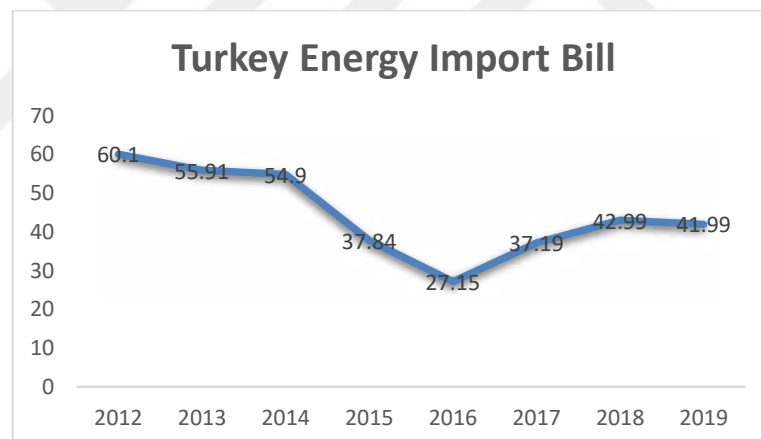
1. INTRODUCTION

A current account is part of total balance of payments accounts. The balance of payments accounts keeps track of goods and service exports and imports. Current account deficit simply means that a country imports more than it exports. As a result, the country must find money elsewhere to pay for its imports because its economy is insufficient to cover them. The current account and the sustainability of the current account balance are the most important macroeconomic indicators for a country's macroeconomic stability, therefore it becomes vital (Christopoulos et al., 2010: 442-459). Emerging economies often run surpluses, whereas rich countries typically run deficits, and third-world countries have account debt, therefore a current account deficit is not necessarily a bad thing for the economy. It's a shift in net foreign assets between countries (Yücel and Yanar, 2013: 483-492). The current account is the intersection of international economics and politics. Unfair trade practices are frequently mentioned by countries with substantial deficits. Policies aimed at reducing the current account deficit would result in a drop in economic growth. Policymakers must examine the effects of macroeconomic measures aimed at boosting economic development and ensuring the current account deficit's sustainability.

Deficits have an impact on economic growth and development. Policymakers are frequently baffled as to how to generate economic development without causing a current account deficit. When current accounts are stable, countries are paying their international debt, however when they are unsustainable, governments are not making the necessary political and economic measures to prevent the debt from rising. The methods used to combat deficits, which can potentially hinder economic growth, include monetary and fiscal policy. Turkey's deficits have risen in parallel with the country's economic expansion in recent years. Turkey's economic policies on how to reduce or improve the sustainability of deficits were shaped by this rapid increase in deficits. Following the global financial crisis of 2008, short-term cash was readily available in foreign markets, resulting in a huge increase in Turkey's current account deficit, which became a serious macroeconomic concern and financial risk for the country. To achieve financial stability, the Central Bank adopted a flexible policy approach.

1.1. Current Account Deficit in Turkey

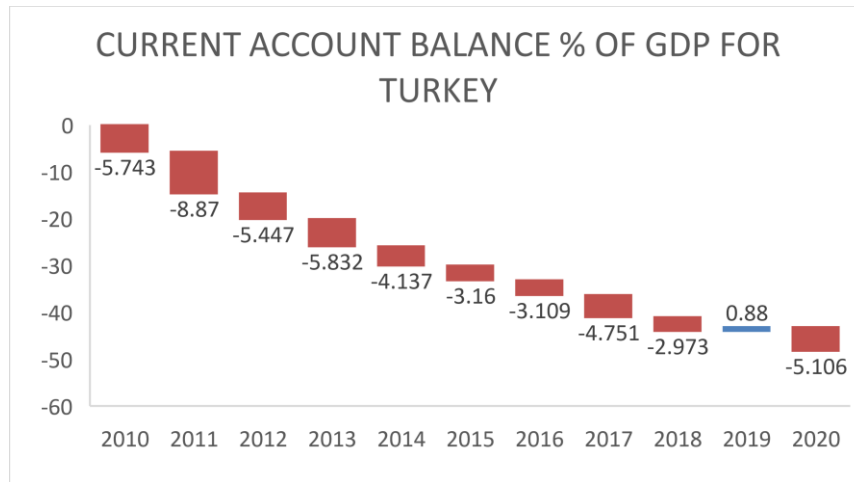
Turkey has been dealing with huge and recurring deficits since the 1980s. Its economy grew as it transitioned from an import substitution system to an open economy. As a result, the country became more connected into the global economy. The current account balance has become a key indication for the Turkish economy. In the 1990s, financial sector macroeconomic instabilities, excessive debt and interest payments, and inefficient savings contributed to high inflation rates and a growth in the current account deficit. Following the 2001 economic crisis, changes in macroeconomic structure boosted economic growth, causing deficits to widen. The government implemented and executed a strict fiscal strategy as well as structural reforms. Because of the global demand for Turkish goods, this strategy increased exports. Energy imports increased as a result of the significant economic growth. The majority of Turkey's deficits are due to energy expenditure. More than 80% of the energy was derived from fossil fuels. As a result, Turkey imports three-quarters of its energy, and its imports have tripled in 30 years.



Source: Turkish Statistical Institute

Figure 1. Displays Turkey Energy Import Bill from 2012-2019

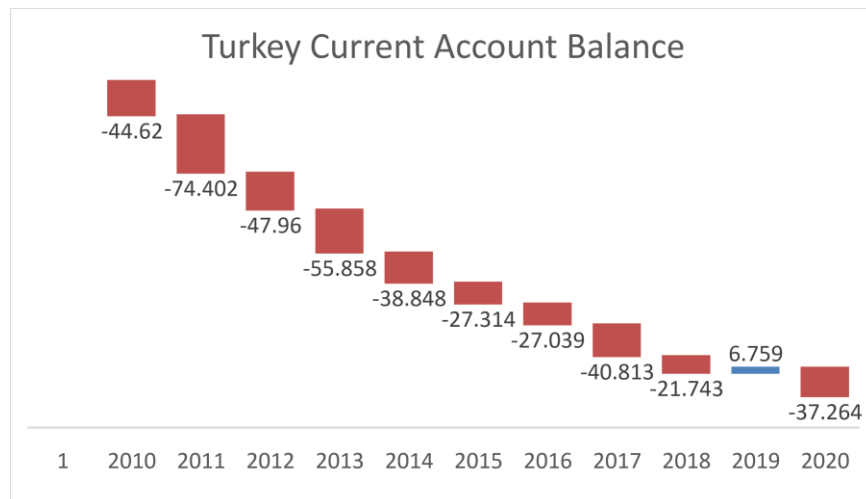
Figure 1 above shows Turkish energy import in \$billions. In 2019 energy imports were over 20%, and 75% of the current account deficit. Turkey spent \$41 billion on energy in that same year which is about a fifth of Turkey's total import bill. In 2018 Turkey paid \$42.99 billion which was also part of a large part of the 2018 country's debt problems. Turkey spent \$60.1 billion in 2012, 2013 was \$55.91billion, \$54.90 billion by the year 2014, \$37.84 billion and \$27.15 billion in 2015 and 2016 respectively. 2017 recorded \$37.19 billion (Turkstat's data)



Source: World Bank

Figure 2. Current Account Balance Percentage of GDP

Figure 2 above displays percentage of GDP for turkey from 2010-2020. 2011 exceeded more than 8%. But in the period of 10 years only in 2019 was when Turkey reported a surplus of 0.88%. In 2020 because of the coronavirus pandemic percentage recorded was -5.106%. When the current account deficit to GDP exceeds 5%, it signals the start of an economic crisis (Yüksel, 2016: 102-121). Deficits of more than 5% of GDP, according to (Milesi and Razin, 1996), are cause for concern, especially when they are financed by short-term debt or foreign exchange reserves. Deficits can be sustainable in the short term, but if the deficit persists over time, how the country repays its debt will determine the flow of money needed to finance the current account deficit before it becomes a big concern for the economy. Creditors will not take the risk of financing debtor countries that are likely to default on their obligations. To maintain and sustain current account deficits in the economy, policies must adjust (Apergis et al., 2000: 599-603). The sustainability of Turkey's current account deficit has been a source of debate and disagreement among experts. However, the majority of people blame it on the country's poor savings rates and energy imports. Despite the fact that the Turkish economy generates large current account deficits, funding them through short- and long-term capital flows from abroad has never been a concern. However, a large current account deficit forces a government to rely on foreign capital. High consumer debt encourages the consumption of imported goods and services, which has a negative impact on a country's current account balance (Tiryaki, 2014: 55-77).



Source: World Bank

Figure 3. Turkey Current Account Balance

Figure 3 above displays Turkish current account balance over the period of 10 years. Turkey Current account deficits was \$44.62billion in 2010 and 74.402billion in 2011. 2019 was a good year for turkey as the account recorded \$6.759billion dollars in excess but the impact of coronavirus took its toll on the account, \$37.264 billion in 2020. Continuous expansion of the economy in the long run country's current account deficit can be harmful since the more it imports, the more debt it accumulates. If imported capital is not utilised efficiently, it may become difficult to repay loans, which could lead to financial market instability (Yaman, 2011). Long-run relationships between current account balances and real exchange rates are crucial for economic growth. Real exchange rates and economic growth have a big impact on the current account balance. 88-98 (Kasman et al., 2005).

1.2. Statement of the Problem

The worldwide economy was disrupted by the coronavirus outbreak. The tourism industry, in particular, has suffered as a result of the global lockdown enforced by countries. This had a significant impact on the tourism industry. Because of low savings, reliance on foreign energy, intermediate products, and structural economic issues, the Turkish economy has a large current account deficit. Economic growth requires a stable current account balance. Increases in GDP growth rate, will increase current account deficit according to (Calderon et al., 2000: 1-37). Starting in 2002, the availability of money on the international market combined with strong domestic demand resulted in an

economic boom, but it also resulted in a massive increase in the current account deficit because a large portion of it was used to finance non-productive investments, such as the Turkish real estate market. Excessive spending and investment, as well as a low savings rate, resulted in significant current account deficits. Borrowing-dependent economic growth, according to (Coskun, 2010), eventually leads to significant account deficits. According to the World Bank, countries with rapid economic growth have a big current account deficit (Debelle and Faruquee, 1996: 58). (Kandil and Green, 2002: 45) shows that an increase in real GDP has a long-term negative impact on the economy. (Kaminsky et al., 1998: 1-48) and (Edwards, 2001) empirically demonstrated that large current account deficits increase the chance of monetary crises in their studies.

Why does the US have such a large current account deficit despite consistent economic growth? Because the dollar is an international currency. Large deficits can exist in countries like the United States and Europe without posing a threat to their economy because their currencies are used for international trade. Unlike other developing countries like Turkey, they must earn foreign currencies to pay for their imports, but because they import more than they export, their accounts are in deficit. These countries will have to find a method or way to cover their deficits. Borrowing money on the international market, luring foreign direct investments, and offering high interest rates to bring money into their economy (also known as "Hot money") are some of the methods countries adopt to fight current account deficits. Tourism also permits foreign currency to pour into the economy. As a developing country, tourism could provide Turkey with an opportunity to accelerate its economic development, compensate for current account deficits, and accelerate its economic growth following the coronavirus pandemic. International tourism income is a vital source of foreign currency for Turkey, according to the World Tourist Organization (WTO), as it aids in debt repayment and the recovery of current account deficits, as well as increasing national income and employment levels. Despite its status as a recently industrializing country, Turkey's GDP, trade, employment, and other macroeconomic indicators are heavily reliant on industrial products production. Turkey is the sixth most popular tourist destination in the world and the fourth most popular in Europe (UNWTO). It drew around 46 million foreign tourists in 2018 and welcomed nearly 51 million in 2019. Turkey's tourism income totalled \$34.5 billion in 2019. According to statistics from the Turkish Ministry of Culture and Tourism, the average expenditure per capita in 2019 was \$666, up from \$647 in 2018, indicating a new

record high and a 17 percent increase from the previous year's \$29.5 billion. The tourism sector in Turkey has grown from 0.6 percent of GDP in 1980 to 6.6 percent in 2003 and 12 percent in 2019, with more than 2.5 million people employed in the industry. The tourist industry accounts for at least 12% of the Turkish economy. Turkey, is one of the major participants in the tourism industry with an absolute advantage due to its geographic location and historical site attractions, it can use tourism to reduce its current account deficit. Tourism is currently one of the major economic drivers around the world. Governments must implement effective means to incorporate the tourist industry into national economic policy in order to create ties and construct locally-driven commercial and financial products and services. The tourism industry creates local economic relationships that involve purchasing supplies directly from the home market, opening up new options for women and low-skilled workers in particular. The majority of tourism-related businesses are small and medium-sized enterprises in need of financial and technical assistance in order to expand and contribute to the national economy. Tourism is a labour-intensive sector that entails the employment of a large number of workers to meet tourist demands. Tourism can help countries with high unemployment not only reduce unemployment but also alleviate poverty. Tourism also creates a market for locally produced goods and services. Products and service providers in the tourism industry are made up of a variety of activities and inputs from several economic sectors. The demand for goods and services in the area is boosted by the influx of tourists. The tourist industry is intertwined with the economy at both the micro and macro levels.

Tourism is one of the world's greatest sectors in terms of employment, number of people serviced, revenue, and added value, according to the United Nations World Tourist Organization (UNWTO). Tourism is an appealing business for investment not only for developing but also for developed countries due to low capital needs and short investment realization periods (Williams, 1992:133-144). By producing foreign exchange revenues, tourism profits can help to alleviate current account deficits. International tourism is now one of the world's most important sectors, and international tourism is one of the most important types of economic globalization (Fayed and Fletcher, 2002: 207). It assures a steady flow of foreign currency, which may be used to buy capital products and boost the country's capital creation. Turkey has a high foreign trade deficit and relies on large amounts of foreign currency to keep its economy afloat. As a result, the tourist industry has been crucial in helping Turkey finance its foreign currency deficit as well as its

economy. Tourism is strongly tied to local economic growth. Tourism aids in bridging some of the gaps that exist between different parts of a country. In many regions of the world, tourism is widely acknowledged as one of the most important drivers of infrastructure development, economic growth, and job creation. Due to the benefits it delivers, tourism has become a priority in countries such as Turkey. Turkey's tourism business has flourished, and its natural advantages provide it an edge in the international tourism market. Turkey has used tourism as a means of demonstrating compliance with foreign financial institutions' export-led growth strategies, such as the International Monetary Fund (IMF) and the World Bank (WB). With the help of the IMF, Turkish governments have prioritized the development of the tourism industry since the 1980s. Turkey accounts for a sizable share of global tourism, but it has yet to reach its full potential. Modern advances in communication technology, transportation, and per capita income are expected to increase demand for tourist-related activities, transforming the tourism industry into a major driver of global development and progress. Many people nowadays travel for leisure. Turkey has to increase investment in tourist infrastructure to remain competitive as a tourist destination. Tourists also contribute to social equality by giving opportunities for the lower and middle classes.

Tourism is one of the world's most important and fastest-growing sectors. Many countries have invested in tourism to improve their economic performance. Globalization, which has become a critical factor in expanding travel, as well as advances in communication technology, information availability, and low transportation costs, have made the tourism and travel industry one of the most important industries in the world (Shakouri, Yazdi, & Ghorchebigi, 2017: 444-452). As a result, tourism has become a major economic engine in both developed and developing countries. Foreign exchange earnings, international investment inflows, more tax revenues, and increased job opportunities have all contributed to the economy's growth. Foreign exchange gains, international investment inflows, increased tax revenues, and job opportunities have all aided tourism-hosting countries' economic prosperity (Alam & Paramati, 2016: 111-126; Dogru & Bulut, 2018: 425-434; Tugcu, 2014: 207-212; Zurub, Ionescu, & Constantin, 2015: 95-102). According to the tourism-led growth theory, an increase in tourist arrivals boosts tourism earnings and economic growth through increasing tourism-related investments and jobs (Katircioglu, 2009: 17-20; Paramati, Alam, & Chen, 2017: 712-724). For developing countries, foreign currency gains from tourism operations are a key

source of foreign currency. Tourism affects a wide range of businesses and government entities. It provides significant economic and societal benefits, but only if objective and scientific knowledge is available (Lew et al. 2008). Tourism includes all aspects of purchasing, selling, and managing services and products. Tourism has a broad scope in that it demands the use of things from other industries. At all levels of the economy, it is a significant and highly competitive sector (Edgell and Swanson, 2013). Countries that understand tourism's competitiveness have adopted a range of strategies to increase tourist numbers, including diversifying tourism attractions, improving technical infrastructure, and developing rural areas. In the twenty-first century, millions of people have more free time and earn more money. Tourism has become one of the fastest-growing economic sectors, thanks to shorter working hours in some cases, more individual prosperity, faster and less expensive travel in comparison to the past, a greater selection of destinations to choose from, and the impact of advanced technology.

Tourism is a business that relies on natural, cultural, and historical resources to generate revenue (Duran, 2013: 925:941). International tourism is an important industry for the economies of countries throughout the world, according to (Fayed and Fletcher, 2002: 207), and internationalization of services is the engine of economic globalization. In traditional international trade, the tourism sector also serves as an export market for domestic commodities. The Turkish government is focusing on tourism as a strategy to address unemployment, the current trade deficit, and inflation (Cimat and Bahar, 2003: 1-18). Tourism is a relatively new business, and it is frequently referred to as a "smoke-free" industry in many developing countries. Tourism has become a life ring for several countries, with a substantial portion of their investment going into this industry for economic development (zünel, 2011: 255-262). International tourism, according to (Arslantürk and Atan, 2012:30-37), helps to balance the accounts, provides the required financial instruments for technological equipment used in production process, increases employment, and leads to economic progress. (Gunduz and Hatemi, 2005:499-504) used bootstrap techniques, and the results demonstrate that hypotheses about tourism-driven growth are supported.

The sector's growth was driven by policies aimed at its development. Despite the fact that tourism is a phenomenon with social and cultural components, it is primarily a social activity that has a significant role due to its economic dimension (Kar et al, 2004: 88). Many countries, particularly emerging economies, use tourism as a source of income

since it provides a considerable amount of revenue in the form of invisible export. Tourism revenue boosts consumer spending and exports of goods and services. Visitors' spending has a positive impact on the economy of the sector. Investments in tourism generate more money for governments in both the tourism and non-tourism sectors. As a result of multiplier dynamics, tourism expenditures produce more revenue (Kızılgöl and Erbaykal, 2008: 351-360). (Figini and Vici, 2010:789-805) demonstrated in their research that tourism specialization cannot alleviate economic development and growth concerns. Their empirical findings revealed that a tourism-dependent country grows in the same way as any other country. Using a 1980-2003 dataset, (Brau et al., 2007:603-614) investigated the empirical link between growth, country size, and tourist specialization. According to the results of their investigation, tourism countries expand much quicker than all other subgroups. Using the P-VAR model, (Samimi et al., 2011: 28-32) investigated the causality and long-term relationship between tourism development and economic growth in developing countries from 1995 to 2009. Their findings revealed a positive long-term relationship between tourism development and economic growth, as well as a bilateral causality. Tourism also contributes to economic growth and improved quality of life. When tourists spend money in the local economy, aggregate demand rises, resulting in spill over effects from other sectors. Tourism not only produces new jobs, but it also gives small and medium businesses new ways to engage in the local economy. Many touristic sites and natural attractions are located in rural villages and isolated locations, which would benefit from tourist demand for products and services by encouraging the development of physical and technological infrastructure to meet the flood of tourists. This encourages investors to invest in those communities, as well as to preserve traditional culture and historical heritage. The influx of tourists also exposes rural villages to the rest of the globe.

In its strategic plan for the years 2015-2019, the Turkish Ministry of Culture and Tourism outlines several tourism goals, including increasing competitiveness, developing year-round tourist activities, and developing a consistent, significant, and attractive brand for Turkey on the international stage. In a highly diversified economy, tourist spending enables for the establishment of new industries to meet market demand created by tourism. There are also the indirect effects of the multiplier effect on the industry. Tourism also helps the national economy by increasing consumer spending as a result of the income earned by international tourists. Tourism development can assist bridge the

gap between a country's developed and underdeveloped regions, as well as foster more balanced regional development. Sinclair, 1998, pp. 1–51) Two viewpoints, the benefits and downsides of tourism development, must be addressed in order to identify and analyse the relationship between tourism and economic activity, according to the report. Tourism has both positive and negative consequences on cities and their residents. The positive benefits of tourism, on the other hand, can help close foreign exchange imbalances and finance capital goods imports, as well as boost personal income, tax revenues, and job possibilities.

The Turkish Culture and Tourism Ministry has been working toward its 2023 targets, which include attracting 75 million tourists and generating \$65 billion in revenue on the 100th anniversary of the Turkish Republic's founding. Following the pandemic, the ministry restructured its strategy to increase visitor numbers and revenue from tourism in order to assist the economy recover and reduce current account deficits. According to the Ministry of Culture and Tourism, the number of international visitors to Turkey has decreased by 51%. In the first quarter of 2020, 4.3 million foreign visitors visited, compared to 8.7 million the previous year. The epidemic struck the world economy hard, leading in low economic growth and activity. In late 2020, coronavirus epidemic broke out in China. On March 11, 2020, the World Health Organization (WHO) declared the outbreak a pandemic, claiming that the world had never seen anything like it in the previous century. The tourism industry has grown to unprecedented levels due to the ease of movement of people, globalization, and modernization; however, with the spread of the coronavirus, strict stay-at-home restrictions were imposed, resulting in the complete shutdown of international travel and tourism activities.

1.3. Purpose of Research

Given the impact of the coronavirus epidemic on the tourism industry, this study forecasted to see if Turkey can meet its revised tourism objective of 75 million tourists by 2023. The second goal is to determine when tourism will return to pre-pandemic levels, given the impact tourism revenues have on Turkey's current deficits.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Introduction

There are three sub-sections in this section. The first section examines the literature on current account deficits and economic growth, followed by an examination of the impacts of coronavirus epidemic on the tourism industry, and finally, tourism data forecasts.

2.2. Current Account Deficit and Economic Growth

Many emerging countries have current account deficits as a result of substantial imports of industrial inputs; their growth is import-oriented. (Özer and Malovic, 2020) used traditional Granger and Frequency Domain Causality Tests to investigate causal relationship between deficits and growth from 2002 to 2017. They found that rising deficits cause growth in the short and medium term because they are financed primarily by short-term borrowing, and their findings show that economic growth for Turkey does not look bright.

Increases in growth rate, according to (Ucar, 2015: 101-108), have an impact on deficits. Granger causality and VAR analyses were used to study the Turkish deficits and growth from 1999 to 2014, the work concluded that policies should be pursued to stop or reduce energy imports and growth should be targeted on long-term basis not short-term. According to (Kara and Sarkaya, 2013: 9-32), they discovered that the recent increase in the current account balance was due to structural (non-cyclical) concerns. According to another research (Keyder, 2006: 28-34) stated that lowering the budget deficit and huge taxes will lower the current account deficit and unemployment. Another study (Erbaykal, 2007: 82) employed Toda and Yamamoto methods to conduct a causality test, revealing that economic growth and exchange rate are causally related to current account deficits. (Telatar and Terzi, 2009: 119-134) looked at the relationship between Turkey's current account deficit and economic development using VAR analysis. They discovered that using impulse-response functions, the current account deficit has a statistically significant negative association with one standard deviation in growth rate shocks. (Ylmaz and Akinci, 2011: 263-277) analysed link between GDP and current account deficit in Turkey

using Granger causality and Johansen cointegration tests. There is a long-term link between GDP and current account deficit, and a unidirectional causality between them. (Kostakoglu and Dibo, 2011:9-11), discovered that one unit of GDP shock has a negative influence on the current account balance/GDP ratio, implying that economic growth leads to an increase in the current account deficit, using VAR and impulse-response functions. The conditional and partial Granger causality tests are used in this (Cevher, 2015: 92-100) study to show the causal linkages between macro aggregates that affect the current account deficit. Current deficit/GDP, growth rate, real effective exchange rate, direct foreign capital investment, trade openness, and import were chosen as variables for this study. From 2003 to 2014, quarterly data was used to study Turkey's economy. An increase in the real exchange rate, on the other hand, would exacerbate the international trade deficit and the current account deficit.

2.3. Impact of Tourism on Economy

(Archer Brian, 1995: 918-930) worked on three separate input-output studies to measure the importance of international tourism to Bermuda's economy relative to other sectors. Results from Bermuda proved that it is dependent on tourism. (Chi-Ok Oh, 2005:39-44) examined tourism development relationship and economic growth in the Korean Economy. Found no evidence of link between tourism and economic growth. (Jiménez and Ortuno, 2006: 488) investigated and measured tourism income in Spain from 1960-2002. Causality tests proved that earnings from tourism and imports of manufactured goods stimulates growth in the economy. (Lau et al., 2008) concluded that tourist arrivals growth leads to economic growth. (Lee and Chang, 2008: 180-192) by using the panel cointegration technique empirically proved that tourism has a greater impact on GDP in non-OECD countries than OECD countries. (Brida et al., 2008: 20) examined the relationships between tourism spending, real exchange rate and economic growth in Mexico. which shows that spending has a large impact on growth.

(Fayissa et al., 2007) used panel data of 42 African countries and showed that tourism industry revenues have a significant impact on the current level of GDP and economic growth of African countries, and it was suggested that African economies stimulate tourism for short-term economic growth. (Khalil et al., 2007: 985-995) studied tourism in Pakistan and showed a strong relationship between tourism, revenue and economic growth in Pakistan. (Vanegas et al., 2007: 7-10) examined the causal

relationship between tourism growth, economic growth and poverty in Nicaragua. They then applied cointegration and causality tests which showed that tourism has a significant positive impact on Nicaragua's economic growth and poverty alleviation. (Rafiq and Shafiqullah, 2007: 971-984) examined the evaluation of the benefits of tourism in Chitral Valley. The study used Zonal Travel Cost Method (ZTCM) using a double logarithmic functional form to estimate the value of recreational visits, and the study helped the local government to adopt an optimal entry fee and efficient resource allocation. (Zortuk, 2009) in an attempted find economic impact of tourism on the Turkish economy proved that there is unidirectional causality between tourist arrivals variables and economic growth. There are also negative effects of tourism on the economy. Tourism can contribute to the spread of epidemics and terrorism (Honey and Gilpin, 2009: 1-11). (Akama and Kieti, 2007: 735-748) noted that regions with revenue from tourism may face threats from vested interests who may try to take control of domestic tourism resources. This could also harm tourism and lead to corruption. Conflicts of interest regarding tourism resources are referred to as the "resource curse" hypothesis in the renewable natural resource class (Auty, 1994: 11-26).

2.4. Forecasting Tourism Data

Countries need to know how many international visitors they have and how much money they make from tourism. This will influence their economic policies. As a result, the need for a precise forecast by employing advanced techniques such as Autoregressive (Integrated) Moving Average-Cause Effect (ARIMAX) or Seasonal Autoregressive (Integrated) Moving Average-Cause Effect (SAIMAX) (SARIMAX). Tourism profits can help a country's balance of payments, raise national income, and reduce unemployment. The tourism industry also boosts demand for domestic goods by bringing in more visitors. In an economy, this has multiplier effects. As a result, precise income and tourism forecasting can result in significant economic gains. As the tourism business has grown over the previous two decades, tourism research has increased. Some researchers used cross-sectional data in the literature on modelling and forecasting tourism demand, whereas the bulk used pure time-series analytical models. ARIMA modelling, which is stated based on the conventional Box-Jenkins technique, a well-known modelling approach in forecasting demand, is one of the time-series models used in forecasting tourism demand. This approach has been used in a number of

investigations. On international tourism revenues for Turkey, (Akal, 2004: 565-580) used an autoregressive integrated moving average cause-effect (ARMAX) model. The ARIMA techniques are used to create the ARMAX model. The forecast estimates are critical for the Turkish government to enhance the tourist sector in order to achieve long-term economic growth. To forecast tourism demand for Hong Kong by residents from ten countries, (Wong et al., 2007: 1068-1078) used different models and the best single forecasts, which have been used extensively in previous studies, may not outperform forecast combinations, according to empirical findings. As a result, combining various empirical models can help to lessen the risk of forecasting mistake. (Botti et al., 2007:115-126) used a basic econometric model and found that available income and relative prices affect tourism in France. (Coshall, 2009: 495-511) used a univariate time series approach to forecast UK's demand for international tourism, combining ARIMA, volatility, and smoothing models. According to this study, ARIMA volatility models tend to overestimate demand, while smoothing models tend to underestimate the number of future tourist arrivals.

In estimating tourism demand, (Chu, 2008:740-751) updated ARIMA modelling to fractionally integrated autoregressive moving average (ARFIMA). This ARFIMA model is based on the ARMA approach. The study used three types of univariate models, with the ARMA model being modified to become ARAR and ARFIMA. The goal of the study was to look into ARMA-based models and their use as a forecasting tool for tourism demand in the Asia-Pacific region. The study was unique in that it demonstrated the behaviour of ARMA-based models and the differences between ARFIMA and other ARMA-based models. From 2001 to 2008, (Song et al., 2003: 435-451) used a general-to-specific modelling approach to anticipate international tourist arrivals to Hong Kong from 16 main countries. An auto-regressive distributed lag model was applied (ADLM). The cost of tourism in Hong Kong, the economic situation in the countries visiting, the expenses of tourism in other regions, and the 'word of mouth' effect are all elements that influence demand for Hong Kong tourism, according to the study. ADLM tourism forecasting measurement is excellent for multivariate modelling, and we may determine numerous elements that cause visitor arrivals in the future using this method. (Greenidge, 2001:8-112) tested tourism demand forecasting in Barbados using structural time-series modelling (STM). When time-varying components may be included in the regression equation to represent the movement of tourist arrivals using explanatory variables, STM

can be effective. The importance of the tourism industry in enhancing trade performance and economic development in Malaysia was studied using the standard Johansen-Juselius co-integration approach (Loganathan, et al., 2008: 83-98). The research revealed interesting data about tourism behavior as well as accurate out-of-sample tourism demand projections. (Preez and Witt, 2003:435-451) examined and analysed two types of tourism forecasting methodologies. They looked at univariate and multivariate modelling, as well as tourism demand forecasting from four European nations to the Seychelles. The researchers discovered that univariate forecasting models outperform multivariate forecasting methods.

Modelling tourism demand volatility can forecast unanticipated events like crises or pandemics. According to (Kim and Wong, 2006: 475-460), economic crises, natural disasters, or conflict might influence tourism demand data volatility. Dynamic specifications such as the vector autoregressive model (VAR), error correction model (ECM), and autoregressive distributed lag model (ADLM) began to appear in tourism literature in the middle of the 1990s. Different sorts of independent variables can be included in a VAR model. From 2003 to 2008, (Song & Witt, 2006) employed a VAR model to forecast. According to the VAR models' predictions, Macau's tourism demand from mainland Chinese residents is on the rise. The ECM model was changed to a vector error correction model (VECM) that can test and impose weak exogeneity constraints. (Bonham et al., 2008:531-549) employed VECM to find a reasonable long-run equilibrium connection and used Diebold-Mariano tests to show that their forecasting model for Hawaii performed well.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Introduction

The data for this study came from the Ministry of Tourism and Culture's statistics on tourism arrivals in Turkey. The first forecast in this study used monthly tourism arrival data from January 2007 to February 2020, which does not include the pandemic period; the second forecast, which includes the pandemic period, used data from January 2007 to May 2021 to determine when Turkey will reach its 75 million tourist goal in 2023. In the second part of the forecast, the same forecast models were employed to determine when tourism numbers will return to pre-pandemic levels. This research focuses on the tourism demand in Turkey and the feasibility of achieving the 2023 tourism objective.

3.2. Research Design and Model

A longitudinal study design is research method where by data is collected throughout periods for the same subject (Salkind, 2010). Using seasonal ARIMA models, the Box-Jenkins method was utilized to predict one period ahead of the data. The SARIMA method includes identification, estimation, and diagnostic testing (Box, 1976). According to the formula $SARIMA(p,d,q) \times (P,D,Q,s)$. A number of autoregressive terms are p and seasonal P are lags of the stationeries series. d and seasonal D means a we have to make the series stationary. q and seasonal Q are the moving average terms, lags of prediction errors and the seasonal length of the data, respectively. The suitable SARIMA parameters were calculated using the ACF and PACF graphs. These models are used to predict future points in data sets (Chu, 2008). An $ARIMA(p,d,q)$ is a model where the integers are greater than or equal to zero and p,d,q are the order of the autoregressive, integrated, and moving average.

3.3. Model Identification

Stationarity is checked on the data. If it isn't, the difference is applied to the data until it reaches a point of stationarity. The value of a stationary series revolves around a fixed mean and variation over time with no seasonality. To find stationarity, use (ACF) and (PACF). For stationarity (ADF) is applied. The next step is to determine if the series'

variance is constant or not. Differential or Box-Cox transformations can be used to transform data. The parameters p and q are then determined using the ACF and PACF. Akaike's Information Criterion (AIC) can be used to determine the best. Lowest AIC is taken.

3.4. Model Estimation

The values of the model coefficients are used to estimate model parameters, and in this study Conditional Sum of Squares and Maximum Likelihood estimations were used. The beginning values were determined using a conditional sum of squares method, followed by maximum likelihood.

3.5. Diagnostic Checking

Residual analysis is performed during diagnostic checking. This stage entails putting the model's assumptions to the test to see if there are any places where it falls short and if the resulting residuals are uncorrelated. The assumptions can be tested using the Box- Pierce and Ljung-Box tests. Forecasting is possible if the model fits well. Forecast evaluation involves obtaining anticipated values that are equal to the model validation time frame. The root mean squared error was used to test the model's accuracy.

3.6. Data Analysis

3.6.1. Sample Autocorrelation Function

It finds how the data points are connected to estimated values depending on the number of time steps between them. Given a time series X_t , we define the sample autocorrelation function, r_k , at lag k as (Box et al., 2016).

$$r_k = \frac{\sum_{t=1}^{N-k} (X_t - \bar{X})(X_{t+k} - \bar{X})}{\sum_{t=1}^N (X_t - \bar{X})^2}$$

For $k = 1, 2, \dots$ (1)

where $\bar{X}$ is the average of n observations.

3.6.2. Sample Partial Autocorrelation Function

It calculates the correlation between two points separated by a certain number of periods, but without the influence of the intervening correlations. Given a time series X_t , the partial autocorrelation of lag k is the autocorrelation between X_t and X_{t+k} with the linear dependence of X_t on X_{t+k} through X_{t+k-1} removed. The sample partial X_{t+k} autocorrelation function is defined as (Box et al., 2016).

$$\phi_{kk} = rk - \sum_{j=1}^{h-1} \phi_{k-1,j} r_{k-j} / 1 - \sum_{j=1}^{j-1} \phi_{k-1,j} r_j \quad (2)$$

Where $\phi_{k-j} = \phi_{k-1,j} - \phi_{k-k} \phi_{k-1,k-j}$, for $j = 1, 2, \dots, k-1$, and $rk = \text{lag } k$ which is the sample correlation.

3.6.3. Root Mean Square Error (RMSE)

Measures the difference between values predicted. It is also known as residuals. According to (Brownlee, 2017), it is the prediction of the estimated variable X it is defined as the square root of the mean squared error.

$$RMSE = \sqrt{\frac{1}{n} \sum_{i=1}^n (\hat{y}_i - y_i)^2}$$

where $\hat{y}_i$ is the predicted values, y_i is the actual value, and n is the number of observations.

3.6.4. Akaike's Information Criterion (AIC)

Measures how strong a model fits in a dataset (Box et al., 2016).

$$AIC_{p,q} = \frac{-2 \ln(\text{maximized likelihood}) + 2r}{n} \quad (3)$$

where n is the sample size, $r = p + q + 1$ is the number of estimated parameters, and including a constant term.

3.6.5. Ljung-Box Q* Test

Is a function of the sample autocorrelation, r_j , to any specified time lag m . Its purpose is testing whether the residuals of a series of observations are random and independent. The test statistic is defined as (Box et al., 2016).

$$Q^* = n(n+2) \sum_{k=1}^m \frac{\hat{r}_k^2}{n-k} \quad (4)$$

Estimated autocorrelation of the series at lag k is $\hat{r}_k$, m denotes number of lags, n is the sample size, and the given statistic is approximately Chi-Square distributed with h degrees of freedom, where $h = m - p - q$.

3.6.6. Conditional Sum of Squares

This is used to find the original values for parameter estimation of SARIMA. (Hyndman and Khandakar, 2008: 1-22).

$$\hat{\phi}_n = \arg \min_{\theta \in \Theta} s_n(\theta) \quad (5)$$

$$\text{where } s_n(\theta) = \frac{1}{n} \sum_{t=1}^n e_t^2(\theta), e_t(\theta) = \sum_{j=0}^{t-1} \alpha_j(\theta) x_{t-j}, \quad \text{and}$$

$\Theta \subset R^P$ is a compact set

3.6.7. Maximum Likelihood

When model order is found, maximum likelihood is used to estimate parameters $c, \phi_1, \dots, \phi_p, \theta_1, \dots, \theta_q$. (Hyndman and Khandakar, 2008: 1-22). This creates parameter outcomes that maximize the likelihood of obtaining the data.

$$\sum_{t=1}^T \varepsilon_t^2 \quad (6)$$

ε_t is the error term.

3.6.8. Box-Cox Transformation

It is used to reduce the variance of a time series and to perform transformations such as logarithms and power transformations that are parameter dependent. (Box, 1976) They are defined as follows;

$$y_i^{(\lambda)} = \begin{cases} \frac{y_i^\lambda - 1}{\lambda} & , if \lambda \neq 0 \\ \ln y_i & , if \lambda = 0 \end{cases}$$

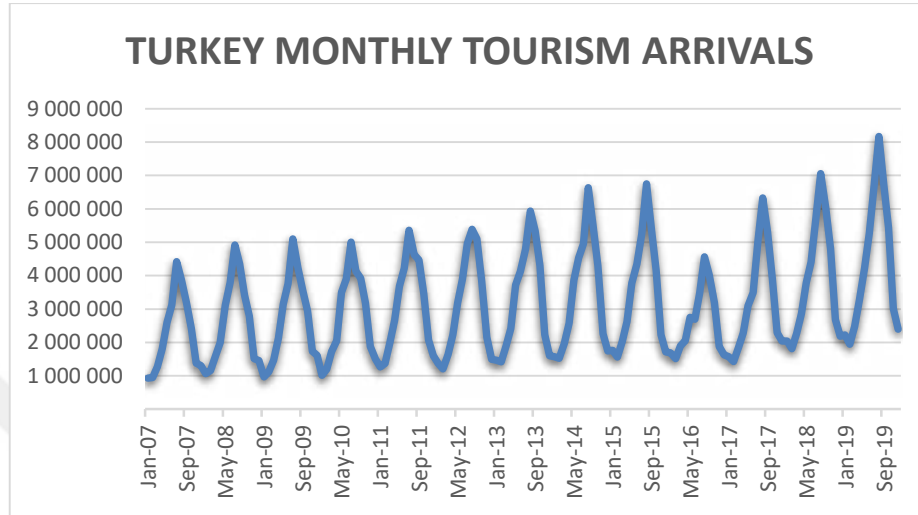
$$w_i = \begin{cases} y_i^\lambda & , if \lambda \neq 0 \\ \ln y_i & , if \lambda = 0 \end{cases}$$

original time series values equals y_i , w_i is transformed time series values using Box-Cox, and λ is the parameter for the transformation.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

4.1. Introduction



Source: Turkey Ministry of Culture and Tourism

Figure 4. January 2007-November 2019 Tourism Arrivals

A line plot depicting the monthly international visitor arrivals is shown in Figure 4. In the time series, there is an increasing trend and seasonality pattern. Seasonality is a common feature of tourist time series (Koc and Altinay, 2007: 227-237). The seasonal pattern of tourism series data is deterministic; however, if the seasonal pattern of the data is stochastic, forecasting is impossible (Hamori and Tokihisa, 2002: 79-86). Akaike Information Criterion and Bayesian Information Criterion was used to identify which model was used to model and forecast SARIMA models. Our first forecast for the period of 2007-February 2020 ARIMA (1,0,0) (0,1,0) [12] fitted into the model. ARIMA (1,0,0) (0,1,1) [12] was used for period including pandemic period from 2007-May 2021. We performed diagnostic checking to choose the model. Residual versus time plot, residual versus fitted plot, ACF graph, PACF graphs, Ljung-Box test. we also applied Augmented Dickey-Fuller (ADF) stationary tests to identify the stationarity:

$$\Delta y_t = y_t - y_{t-1} = \alpha + \beta t + \gamma y_{t-1} + e_t$$

4.2. Turkey tourism 2023 Forecasts

The purpose of this forecast is to find out when turkey will reach its 2023 tourism strategy of 75 million tourists by the year 2023. The first forecast analyses data from January 2007 to February 2020. This period does not cover pandemic period. The second forecast covers pandemic period from January 2007 to May 2021. This includes data during pandemic period.

4.2.1. First Forecast

This forecast does not include pandemic data. This forecast used monthly tourism arrival data from January 2007 to February 2020. Figures 3 and 4 below displayed the Autocorrelation and Partial Auto-Correlation Functions of the forecast. The result is as follows:

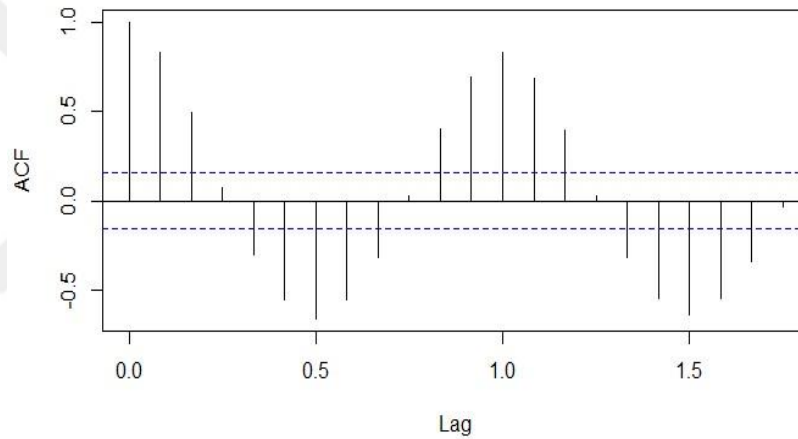


Figure 5. Autocorrelation Function For the first Forecast

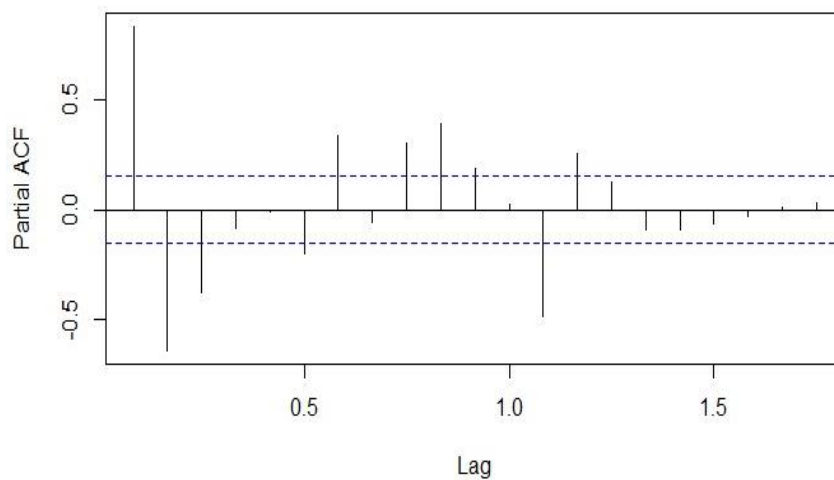


Figure 6. Partial Auto-Correlation Function

Augmented Dickey-Fuller Test Dickey-Fuller was carried out to prove stationarity of the series:

-10.596, Lag order = 5, p-value = 0.01

Using our ACF and PACF we choose ARIMA (1,0,0) (0,1,0) [12]

Coefficients:

ar1

0.8622

Standard Error = 0.0403

sigma² estimated as 6.996e+10

log likelihood= -2030.24

Akaike's Information Criterion (AIC) = 4064.49

Bayesian Information Criterion (BIC) = 4070.46

Root Mean Square Error (RMSE) = 253393.1

Dickey-Fuller was used first to establish the dataset's stationarity. The Akaike Information Criterion of 4064.49, the Bayesian Information Criterion of 4070.46, which are estimators of prediction of error in model selection, and the Root Mean Squared Error of 253393.1 were used to determine which model was used to model in this forecast. The quality of fit of a statistical model was measured by log-likelihood, which was -2030.24, and the variance of the error term was evaluated by sigma², which was 6.996e+10. Finally, with an ar1 of 0.8622 and a standard error of 0.0403, the confidence interval for the prediction equals 0.0403.

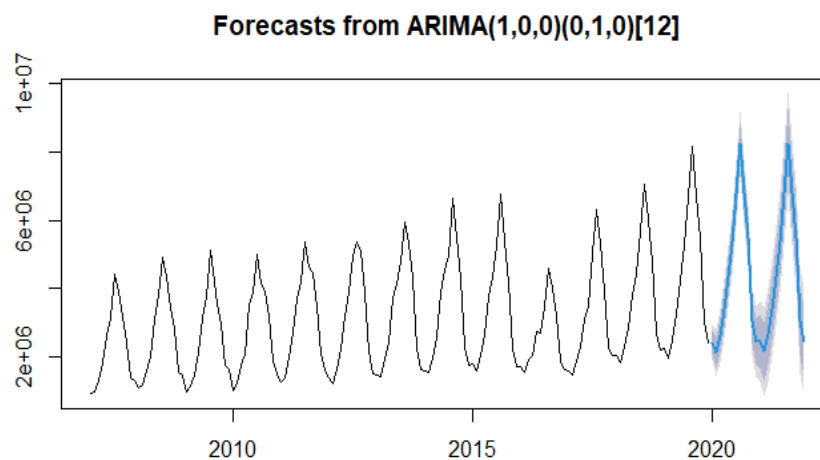


Figure 7. Forecast Generated without Pandemic Data

Figure 7 shows the outcome of our forecast, which shows that Turkey will achieve its 75 million 2023 tourism strategy goals by 2022, with about 75 million tourists arriving. This analysis excludes data from the pandemic period. Turkey would have reached its aim a year earlier than expected.

4.2.2. Second Forecast

This forecast included coronavirus pandemic data. The data analysed here covers the period between January 2007 to May 2021 which was the data available as of carrying out this research.

ARIMA (1,0,0) (0,1,1) [12] with Coefficients:

```
ar1    sma1
0.9253 -0.3659
Standard Error (s.e) = 0.0289  0.0984
Sigma^2 estimated as 1.533e+11
Log likelihood = -2260.41
Akaike's Information Criterion (AIC) = 4526.81
Bayesian Information Criterion (BIC) = 4536.06
```

The Akaike Information Criterion 4526.81 and the Bayesian Information Criterion 4536.06, which are estimators of prediction of error in model selection, were used to determine which model was used to model and forecast monthly foreign visitor arrivals in Turkey for the dataset from January 2007 to May 2021. The goodness of fit of a statistical model was measured by log-likelihood, which was 2260.41, and the variance of the error term was estimated by sigma2, which was 1.533e+11. Finally, the Autoregressive (ar1) 0.9253, Seasonal Moving Average (sma1) -0.3659, and the standard error, which creates the confidence interval for the prediction, are -0.0289 and 0.0984, respectively.

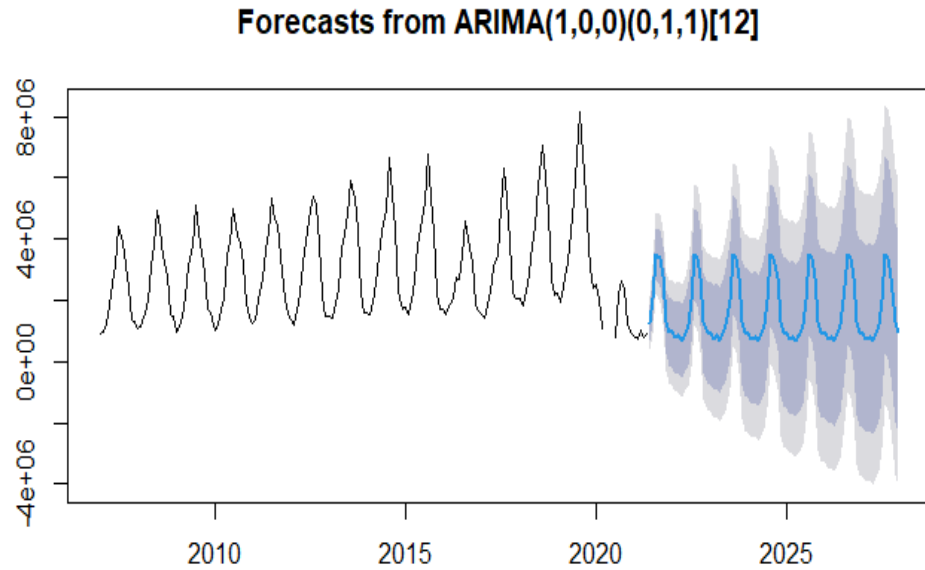


Figure 8. Forecast Generated with Pandemic Data

Figure 8 presents an estimate for when Turkey would achieve its 2023 tourism goal, with the result that Turkey will attract approximately 73 million tourists in 2026 and nearly 77 million tourists in 2027. This reveals that the pandemic has affected Turkey's tourist strategy 2023 target, extending it by 4 to 5 years.

4.3. Second Part Forecast

This second part forecast applied the same Seasonal Arima Model to forecast the same tourist monthly arrival time series data set from January 2007 to February 2020 before pandemic using ARIMA (1,0,0) (0,1,0) [12] and a second forecast from January 2007 to May 2021 by applying ARIMA (1,0,0) (0,1,1) [12]. The purpose of this forecast is to see when tourism will equal the level or return to pre-pandemic period.

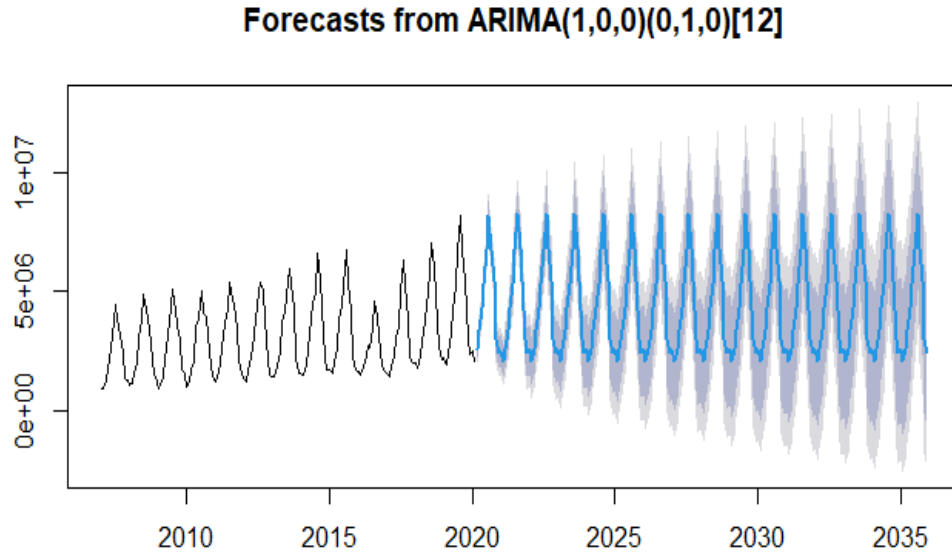


Figure 9. Forecast to find when tourism will hit pre-pandemic level from January 2007-February 2020.

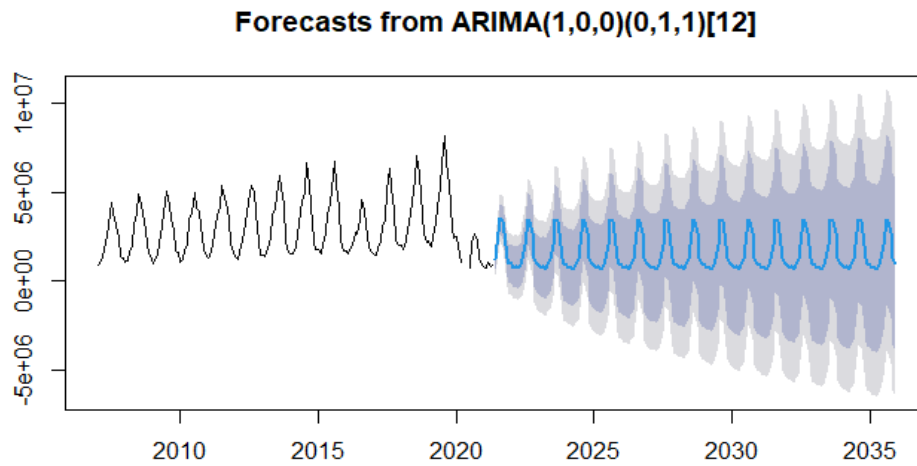


Figure 10. Forecast with pandemic data to find when tourism will reach pre-pandemic data from January 2007-May 2021.

Without a pandemic, tourism arrivals in Turkey will reach around 100 million in 2030 and 110 million in 2035, according to the results of this test shown in Figure 9. Figure 10 shows a prediction that includes pandemic data, and based on the tests, tourist arrivals will be around 90 million in 2030 and 107 million in 2035. The conclusion clearly reveals that, assuming the pandemic persists, Turkey will be able to return to pre-epidemic tourism arrivals in 2035, which represents a 15-year gap due to the pandemic.

CHAPTER FIVE

5. CONCLUSION AND POLICY RECOMMENDATIONS

5.1. Conclusion

Tourism arrivals in Turkey were forecasted using seasonal ARIMA models. The research was based on monthly arrival data provided by Turkey's Ministry of Culture and Tourism. Four separate projections were made, each with its own set of goals. The first two forecasts were conducted to determine when Turkey will reach its 2023 tourism strategy goals of 75 million tourists by 2023, both with and without a coronavirus pandemic. Based on our first forecast, which used monthly data from January 2007 to February 2020 and did not include the pandemic period, Turkey would have met its target by 2022, a year earlier than expected. The second estimate looked at monthly arrival data from January 2007 to May 2021, which was available at the time of this research, and found that Turkey will see roughly 73 million tourists by 2026 and approximately 77 million tourists by 2027, based on our test. Based on our data and tests, we may conclude that Turkey has wasted 4 to 5 years in meeting its 2023 target. The second goal of this research is to determine when the amount of tourism will be the same with and without the coronavirus, and when it will return to pre-pandemic levels. The research used the same Seasonal ARIMA Model, and the results showed that by 2035, tourism levels in Turkey will close the gap caused by the coronavirus pandemic, with tourist arrivals reaching approximately 110 million without the pandemic and 107 million with the pandemic, a 15-year gap if the pandemic continues. However, the findings of this study are reliant on the pandemic continuing and possible global lockdown. However, because the coronavirus vaccination is now widely available, tourism may return to normal levels. Nevertheless, a new strain of the coronavirus could hinder tourism recovery. The impact of a pandemic is considerable, necessitating multidisciplinary research (Wen et al., 2020: 1068-1078). Because of the study's interdisciplinary nature, it's difficult to determine the full amount of the coronavirus pandemic's impact on Turkey's 2023 tourism targets, but this work can be expanded to pandemic-related research.



Source: UNWTO

Figure 11. United Nations World Tourism recovery Outlook from 2021-2024

Figure 11 above illustrates a global analysis and forecasting by the United Nations World Tourism Organization (UNWTO) among its experts on the impact of coronavirus pandemic on tourism and the expected time of recovery. According to the experts, tourism will recover at 4% in the year 2020, by the year 2022 16%, 2023 at 36% and 64% by 2024. Tourism is one of the most vulnerable sectors during a crisis. With an expected loss of \$1.3 trillion in export earnings, 2020 was a disastrous year for the tourism industry (UNWTO). A little comeback in the summer months of 2020 gave some hope for a speedy recovery, but new coronavirus strains in several countries are making the path for tourism recovery uncertain, with some governments imposing stay-at-home lockdowns or travel restrictions. Experts are cautious about the industry's recovery prospects, with many predicting that it would not recover to pre-pandemic levels before 2023.

The future of travel appears unclear, and the future of travel appears to be uncertain. Regions and countries who were able to control the virus early, as well as those with strict public safety standards, are projected to recover faster than expected. Tourism appears to be dependent on the effectiveness of coronavirus vaccines in the future. This will have an impact on how individuals travel to different locations. Vaccinations will be a critical role in recovery, and the speed and effectiveness with which they are administered will have a direct impact on restoring tourism levels to pre-pandemic levels.

5.2. Policy Recommendations

Following are policy recommendations based on the empirical findings of this study for Turkey to realize its 2023 tourism plan and recover to pre-pandemic levels.

- ❖ With the possibility of a return to total lockdown approaching due to coronavirus outbreaks, Turkey has to speed up its immunization campaign. This will reassure tourists and their governments that the area is safe to visit. The immunization of 300,000 employees in the tourism business (Ministry of Culture and Tourism Turkey) is commendable, but further efforts and government attention, in conjunction with foreign governments, should be addressed. In addition, Turkey might provide free vaccinations to arriving tourists.
- ❖ Regarding travel safety and contradicting information, skepticism continues. As a result, when planning a vacation, tourists will seek advice from experts or their governments. To ease visitor inflow, Turkey must make its travel and health rules safe, as well as remove any obstacles or bureaucracy.
- ❖ Turkey must rebrand itself as a tourist destination in this digital age. The ministry of culture and tourism has set aside funds for the development of promotional films, but as the globe becomes increasingly digital as a result of the epidemic, Turkey may have an opportunity to reach out to a wider audience online about the potential of its tourism experience.
- ❖ Finally, Turkey's tourist policy has long overlooked Africa's potential. Countries like Nigeria and South Africa are one of the world's largest rising economies, with the potential to raise tourist numbers and revenue for Turkey. As a result, if Turkey wants to accomplish its 2023 tourism goal, which corresponds with the 100th anniversary of the Turkish Republic, investments should be made in the African continent.

5.3. Limitations of the study

This study looked at monthly tourism arrival data for Turkey from 2007 through May 2021. Only the Autoregressive integrated moving average (ARIMA) and seasonal autoregressive integrated moving average (SARIMA) were used (SARIMA). This study's findings are predicated on the presumption that the epidemic would continue and that the tourist sector will not see any breakthrough or shift. However, as more data becomes available, the study believes that the tourism industry may recover faster than expected or return to lockdowns, depending on how effective the vaccines are. The study also looked at tourist arrivals, and more research into the impact of the pandemic on the tourism industry's services sector may be conducted in the future.



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