

**IBN HALDUN UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF AIR TRANSPORT MANAGEMENT**

MASTER THESIS

**FREEDOMS OF THE AIR AND EFFECTS OF 5th FREEDOM
IMPLEMENTATION AT ANKARA AIRPORT**

FATİH SARI

THESIS SUPERVISOR: ASST. PROF. NİHAT GÜMÜŞ

ISTANBUL, 2020

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FREEDOM IMPLEMENTATION AT ANKARA
AIRPORT**

by

FATİH SARI

**A thesis submitted to the School of Graduate Studies in partial
fulfillment of the requirements for the degree of Master of Science in
Air Transport Management**

THESIS SUPERVISOR: ASST. PROF. NİHAT GÜMÜŞ

ISTANBUL, 2020

APPROVAL PAGE

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Air Transport Management.

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Opinion

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This is to confirm that this thesis complies with all the standards set by the School of Graduate Studies Ibn Haldun University:

Date

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ACADEMIC HONESTY ATTESTATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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Signature:

ÖZ

HAVACILIK HAKLARI VE 5. HAVA HAKKININ ANKARA HAVALİMANINDA UYGULANMASININ TİCARİ OLARAK OLUMLU VE OLUMSUZ ETKİLERİ

Yazar Sarı, Fatih

Hava Taşımacılığı Yönetimi Yüksek Lisans Programı

Tez Danışmanı: Dr. Öğr. Üyesi Nihat Gümüş

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Bu tez çalışmasının amacı Hava Trafik Haklarını araştırıp analiz etmek, ayrıca bir pazar ne kadar liberal ise pazarın o ölçekte büyüdüğünü ispat etmektir. Genel olarak Sivil Havacılık otoriteleri kendi doğal pazarlarını ve bayrak taşıyıcı hava yollarını korumak amacı ile üçüncü ülke havayollarının dış hatlarda yolcu taşımalarına izin vermemektedirler. Lakin üçüncü bir ülkenin havayolunun yolcu taşınması pazarın büyümesine katkı sağlayacak ve olumlu sonuçlar elde edecek şekilde kullanılabilir. Bu bağlamda atıl kalmış veya istenilen yolcu sayılarına ulaşamayan havalimanları olumlu olarak etkilenecektir. Bu tez çalışması toplamda altı bölümden oluşmakta olup Giriş ve Literatür Tarama bölümlerinden sonra üçüncü bölüm olan havacılık haklarının tanımı gelmektedir. Dördüncü bölümde bu çalışmanın yöntemi anlatılmaktadır. Beşinci bölümde ise liberalleşme konusunda ileri seviyede olan Singapur Cumhuriyeti'nin sivil havacılıktaki büyümesi analiz edilmiş olup sonuçları ise tezin amacı olan Türkiye'de yıllık 25 Milyon yolcu kapasitesi olup istenilen yolcu sayısına ulaşamayan Ankara Havalimanında karşılaştırmalı olarak kullanılmıştır. Bu çalışmada kullanılan veri ve istatistikler IATA'dan alınmıştır. Son bölümde ise nihai olarak liberalleşmenin olumlu ve olumsuz etkileri irdelenmiştir. Araştırmamızda nitel metod, alt yöntem olarak da karşılaştırmalı metod kullanılmıştır.

Anahtar Kelimeler: 5. Havacılık hakkı, Liberalleşme, Sivil Havacılık Otoritesi, Gelir, Maliyet, IATA

ABSTRACT

FREEDOMS OF THE AIR AND THE ECONOMICAL EFFECTS OF 5th FREEDOM IMPLEMENTATION AT ANKARA AIRPORT

Student Name: Sarı, Fatih

MSc in Air Transport Management

Thesis Supervisor: Asst. Prof. Nihat Gümüş

July 2020, 65 Pages

The purpose of this thesis is to analyze the Civil Aviation Regulations, and to prove that the more a market is liberalized, the better chance it has to grow. Many civil aviation authorities are strict regarding airlines of third-party countries in order to protect their own market and to support their flag carrier. However, it is possible to use third-party countries' airlines in order to grow the market and while supporting their own flag carrier. Unproductive airports and Flight Information Regions might be used to set the market in motion. This thesis contains six chapters. After Introduction and Literature Review the third chapter contains the definition of Air Freedoms. Chapter four contains the Study Methodology. In the fifth chapter, the Civil Aviation Authority Singapore, which has one of the most liberalized regulation policies, has been evaluated. The positive and negative effects of implementing the model of Singapore, at the Ankara Airport which has a capacity of 25M passenger per year has been determined. For data and statistics figures from IATA have been collected. The last part contains the conclusion. For this research, quantitative methods have been used, along with the descriptive method.

Keywords: 5th Freedom the Air, Liberalization, Civil Aviation Authority, Revenue, Cost, IATA

DEDICATION

This dissertation is dedicated to my thesis Advisor, Asst. Prof. Nihat Gümüő, for giving no spare in effort to support me. Also it is dedicated to my parents and spouse as well as my professional superiors Chief of Cabinet to The President of Turkey Mr. Amb. Assoc. Prof. Hasan Dođan, Chief of Protocol to The President of Turkey Mr. Alparslan Acarsoy and to my work mates for their endless patience and support.



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TABLE OF CONTENTS

ÖZ.....	iv
ABSTRACT.....	v
DEDICATION.....	vi
ACKNOWLEDGMENT.....	vii
TABLE OF CONTENTS.....	viii
LIST OF TABLES.....	xi
LIST OF FIGURES.....	xiv
LIST OF SYMBOLS AND ABBREVIATIONS.....	xv
CHAPTER I INTRODUCTION.....	1
CHAPTER II LITERATURE REVIEW.....	4
CHAPTER III DEFINING FREEDOMS IN THE AIRLINE INDUSTRY.....	7
.3 Freedoms of the Air.....	7
3.1 First Freedom of the Air.....	8
3.2 Second Freedom of the Air.....	10
3.3 Third Freedom of the Air.....	11
3.4 Fourth Freedom of the Air.....	12
3.5 Fifth Freedom of the Air.....	13
3.6 Sixth Freedom of the Air.....	14
3.7 Seventh Freedom of the Air.....	16
3.8 Eighth Freedom of the Air.....	16

3.9 Ninth Freedom of the Air.....	17
CHAPTER IV METHODOLOGY OF THE STUDY	19
CHAPTER V ANALYSIS OF THE APPLICATION OF THE 5th FREEDOM TO THE ANKARA AIRPORT.....	21
5.1 Current Status at the Singapore Changi Airport.....	21
5.1.1 Fifth Freedom Operation at the Singapore Airport and its Effect on the Singapore Economy.....	22
5.1.2 Flight Evaluation: Chicago – Singapore	24
5.1.3 Flight Evaluation: Chicago – Hong Kong.....	25
5.1.4 Flight Evaluation: Singapore – Hong Kong.....	25
5.1.5 Flight Evaluation: Hong Kong – Singapore.....	26
5.1.6 Flight Evaluation: Hong Kong – Chicago.....	27
5.1.7 Flight Evaluation: Singapore – Chicago.....	27
5.1.8 Overall Evaluation of Entire Route.....	28
5.1.9 Market and Revenue Share of United Airlines between Singapore and Hong Kong Airport.....	31
5.1.10 Economical Effects of United Airlines Operation at the Singapore Changi Airport.....	32
5.2 Current Status at the Ankara Airport.....	36
5.2.1 Agreements and Strategy of Directorate of Civil Aviation Turkey.....	40
5.2.2 Fifth Freedom Operation at Ankara Airport and Possible Negative and Positive Economical Effects.....	42
5.2.3 Flight Evaluation: Amman – Ankara.....	44

5.2.4	Flight Evaluation: Amman – Moscow.....	46
5.2.5	Flight Evaluation: Ankara – Moscow.....	47
5.2.6	Flight Evaluation: Moscow – Ankara.....	48
5.2.7	Flight Evaluation: Moscow – Amman.....	50
5.2.8	Flight Evaluation: Ankara – Amman.....	50
5.2.9	Overall Evaluation of Entire Route.....	52
5.2.10	Fare Ratio of United Airlines and Cathay Pacific Airways Flight by Flight.....	53
5.2.11	Expected Revenue and Load Factor of Royal Jordanian Airlines 5th Freedom Operation.....	54
5.2.12	Expected Costs of the Royal Jordanian Airlines 5th Freedom Operation.....	55
5.3	Negative and Positive Economical results of 5th Freedom Operation at Ankara Airport.....	57
CHAPTER VI CONCLUSION AND RECOMMENDATIONS.....		59
REFERENCES.....		62
CURRICULUM VITAE.....		65

LIST OF TABLES

Table 5.1 Distribution of passengers travelling between Chicago-Singapore in FY 2015.....	24
Table 5.2 Distribution of passengers travelling between Chicago-Hong Kong FY 2015.....	25
Table 5.3 Distribution of passengers travelling between Singapore-Hong- Kong in FY 2015.....	26
Table 5.4 Distribution of passengers travelling between Hong Kong-Singapore in FY 2015.....	26
Table 5.5 Distribution of passengers travelling between Hong Kong-Chicago in FY 2015.....	27
Table 5.6 Distribution of passengers travelling between Singapore-Chicago in FY 2015.....	28
Table 5.7 Revenue of route Chicago-Singapore-Hong Kong-Singapore-Chicago in FY 2015.....	28
Table 5.8 Cost of route Chicago-Singapore-Hong Kong-Singapore-Chicago in FY 2015.....	30
Table 5.9 Profit of route Chicago-Singapore-Hong Kong-Singapore-Chicago in FY 2015.....	30
Table 5.10 Market share of carriers between Singapore-Hong Kong in FY 2015.....	31
Table 5.11 Market share of carriers between Hong Kong-Singapore in FY 2015.....	32
Table 5.12 Airlines operating 5th Freedom at Singapore Changi Airport.....	33
Table 5.13 Civil Aviation Authority Singapore Agreements in 2015.....	34
Table 5.14 United Airlines payments at Singapore Airport.....	35
Table 5.15 Growth of Ankara Airport.....	36

Table 5.16 Non-Turkey-based Airlines operating to Ankara.....	38
Table 5.17 Turkey-based Airlines operating from Ankara.....	39
Table 5.18 Growth of Istanbul Airport-Passenger Numbers.....	41
Table 5.19 Growth of Istanbul Airport-Aircraft Movements.....	41
Table 5.20 Amman-Ankara market share in FY 2019.....	44
Table 5.21 Pegasus Airlines Amman-Ankara passenger numbers and connections in FY 2019.....	45
Table 5.22 Estimation of market share and passenger figures of Royal Jordanian Airlines on Amman-Ankara flight.....	45
Table 5.23 Amman-Moscow passenger distribution in FY 2019.....	46
Table 5.24 Amman-Moscow Vnukovo market share in FY 2019.....	47
Table 5.25 Ankara-Moscow market share in FY 2019.....	47
Table 5.26 Ankara-Moscow Vnukovo market share in FY 2019.....	48
Table 5.27 Estimation of market share and passenger figures of Royal Jordanian Airlines on Ankara-Moscow flight.....	48
Table 5.28 Moscow-Ankara market share in FY 2019.....	49
Table 5.29 Moscow Moscow Vnukovo-Ankara market share in FY 2019.....	49
Table 5.30 Estimation of market share and passenger figures of Royal Jordanian Airlines on Moscow-Ankara flight.....	49
Table 5.31 Moscow-Amman market share in FY 2019.....	50
Table 5.32 Ankara-Amman market share in FY 2019.....	51
Table 5.33 Ankara-Amman passenger distribution in FY 2019.....	51
Table 5.34 Estimation of market share and passenger figures of Royal Jordanian Airlines on Ankara-Amman flight.....	52
Table 5.35 Fare ratio United Airlines and Cathay Pacific Airways Flight by Flight...	53
Table 5.36 Expected revenue of Royal Jordanian Airlines.....	54

Table 5.37 Costs of Royal Jordanian Airlines for Amman-Moscow-Amman flight....56

Table 5.38 Expected costs for Royal Jordanian Airlines for Amman-Ankara-Moscow-Ankara-Amman flight.....57



LIST OF FIGURES

Figure 3.1 First Freedom of the Air.....	9
Figure 3.2 Second Freedom of the Air.....	10
Figure 3.3 Third Freedom of the Air.....	12
Figure 3.4 Fourth Freedom of the Air.....	13
Figure 3.5 Fifth Freedom of the Air.....	14
Figure 3.6 Sixth Freedom of the Air.....	15
Figure 3.7 Seventh Freedom of the Air.....	16
Figure 3.8 Eighth Freedom of the Air.....	17
Figure 3.9 Ninth Freedom of the Air.....	18
Figure 5.1 United Airlines 5th Freedom route.....	24
Figure 5.2 Growth of Ankara Airport.....	37
Figure 5.3 Royal Jordanian Airlines 5th Freedom route.....	43

LIST OF SYMBOLS AND ABBREVIATIONS

ACI	Airport Council International
AL	Airline
AMM	Amman Airport Three Letter Code
ARR	Arrival
BEY	Beyrut Airport Three Letter Code
BSP	Billing and Settlement Plan
CAAS	Civil Aviation Authority Singapore
CAG	Changi Airport Group
CARG	Cummulative Annual Growth Rate
DEP	Departure
DGR	Dangerous Goods Regulation
DME	Domodedovo Airport Moscow Three Letter Code
ESB	Ankara Airport Three Letter Code
EXP	Expected
FIR	Flight Information Region
FT	Flight Time
FY	Fiscal Year
GDP	Gross Domestic Product
HKG	Hong Kong Three Letter Code
IASTA	International Air Services Transit Agreement
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
KRT	Khartoum Airport Three Letter Code
LCC	Low-Cost Carrier
ASA	Air Services Agreement
LF	Load Factor
MKT	Marketing
ORD	Chicago O'Hare Airport Three Letter Code
DDS	Direct Data Solutions
PC	Pegasus Airlines
REV	Revenue

RJ	Royal Jordanian Airlines
CX	Cathay Pacific Airlines
SAG	Singapore Airlines Group
SQ	Singapore Airlines
SAW	Sabiha Gokcen Airport Istanbul Three Letter Code
SIA	Singapore International Airport
SIN	Singapore Airport Three Letter Code
SV	Saudi Arabian Airlines
TK	Turkish Airlines
TL	Turkish Lira
TUIK	Turkish Statistical Institute
UA	United Airlines
USA	United States of America
USD	United States Dollar
VKO	Vnukovo Airport Moscow Three Letter Code

CHAPTER I

INTRODUCTION

The aviation has come into existence and has been growing within the last century. During the century many objects have affected regulations and practices of the aviation sector. For instance, the developments in technology, globalization, economical growth and safety. Therefore significant changes have been made. To adjust the sector to the needs of the industry, travellers and air operators' needs have been considered. But one of the needs of the air operators is the air operator's sustainability. Within the last hundred years many air operators have been established and surviving in the industry has been always compelling. Being sustainable for an airline is not easy especially since the cost to operate an airline is very high. To reduce the cost has been always a topic of research.

On the other hand, airports were established by governments. Later, once the industry grew, governments changed their strategy and started to allow private firms to establish and operate an airport. For that reason airports were managed according to a private sector mentality, which led to an increase in service levels. In order to increase their revenue airport operators encouraged airlines to operate their base airport. The more airlines operated an airport the more their revenue grew. Still, for airlines it is not reasonable to operate to an airport as long as it is costly.

On the other hand, the civil aviation authorities and airport authorities of governments are establishing the rules to operate in their airspace, either to overfly or to operate in their territory. In general, authorities are strict when it comes to allowing an airline to operate in their territory. The reason for this is that the civil aviation authorities and airport authorities are trying to protect their market. That is why many of the permissions to overfly or to operate in a territory are based on bilateral

agreements, in order to establish a mutual benefit. One part of bilateral agreements of government authorities the airlines have to obey the rules of each government, such as using specific air routes, paying a determined fee to use the air space, and paying a determined amount for air navigation. Also there are other fees such as landing and departure fees determined by the airport authorities.

ICAO (International Civil Aviation Authority) was formed during the Chicago Convention in 1944. The ICAO was established with the joint agreement of many states with the purpose of creating a single practice system in the world for the airline industry. On the later conventions ICAO agreed on the Freedoms of the Air rights which consist of nine freedoms. All agreements of the governments are based on these nine Freedoms of the Air, and the agreements between governments are called ASA (Air Services Agreements).

Operating an airline is based on a mixed system. On one hand it has to be economically sustainable, on the other hand it has to obey government rules and deal with airport operators. While dealing with the authorities an airline has to work on feasible routes and network planning. From this point of view, it is difficult for airlines to detect the best model to sustain their business in the market. Any airline that can not sustain itself in the market is a loss for the economy, and this has a domino effect, such as causing unemployment. To have a sustainable market for airlines the governments and authorities should support airlines by liberalizing their markets. This will allow airlines to optimize their networks and to create feasible routes. The more a network is feasible the better an airline will sustain itself in the market and will support its economy.

In this dissertation the Freedoms of the Air and the economical effects of the 5th Freedom of the Air will be discussed. The aim is to prove that granting the 5th Freedom of the Air for foreign carriers will allow foreign carriers to optimize their network and to survive in the market. If a carrier sustains in the market it will affect the local economy positively. Protecting a market is a natural result of government strategies. To support the local carriers and airspace is mandatory, especially when global competition is the main driving force to do so. However, the regulations might be used in order to optimize the air space and airports in order to create more revenue. By creating more revenue through liberalization, a country's legacy airlines passenger

revenue may decrease. But the revenue that the foreign airline create is more than the legacy carrier will lose.

5th Freedom of the Air is allowing a foreign carrier to operate in a government's territory and to operate beyond to other foreign countries. This kind of an operation allows the foreign airline to market its service from one country to another. At first sight it seems to be very liberalized which is true since only very liberalized countries authorities allow 5th Freedom of the Air operation. But the liberalized countries authorities are aware that the revenue created by an airline is higher than the revenue lost by passenger revenue. This will be evaluated and proven in the next chapters in this dissertation.

In the light of the above information, and the discussion on this dissertation, the 5th Freedom of the Air should be used as a tool to optimize unproductive airports, rather than using it as a regulation to protect a government's territory and market. This will allow an increase in revenue for local authorities and airlines to optimize their network, revenue and costs. As the agreements are based mutual benefits, both legacy carriers of governments will be able to create new markets. The governments do not need to provide 5th Freedom of the Air to all states or for all airports in its territory. It can be limited to selected destinations and/or airports with low demand only.

CHAPTER II

LITERATURE REVIEW

The beginning and development of the airline industry is stretched in to one century. During this development there have been many changes. The airline firms in many countries were either founded as government firms or were strongly supported by governments. As the air space is under the regime of the related country, the airline industry has always been under the power of that government. Thus the liberalization or deregulations were always gentle. Since globalization has accelerated with the technological developments within the last century the strategy of the governments have changed as well, and liberalization has been mandatory for airlines, civil aviation authorities as well as airport authorities.

The competition in the aviation industry is a global monopolistic competition. Global Airlines in the world are in a strong relationship as well as in tough competition. The products and services the airlines provide differentiate the airlines from each other. According to the root cause analysis, the differentiation and variation of flight times, effects of the flight frequency and load factor and service quality, results a global monopolistic competition model (John C., 1979).

On the other hand the competition is not only based on global monopolistic competition but also liberalization and sustainability plays an essential role. Air transport's relationship to the globalization/liberalization/sustainability nexus can be considered as an equilateral triangle (Andrew and Brian 2004). But for sure there are other significant variations within the industry, airport operators, for example, being far more cognisant - for sound business reasons - of environmental issues than are airlines (Graham, 2001).

Effects of liberalization are in common considered as positive. While competition, efficiency of airlines, network and frequencies are increasing, fares are decreasing and the network of airlines is getting more globalized (Gerede, 2015). Liberalization of the Air is supporting the economy in terms of creating new opportunities for consumers. This allows carriers to stimulate the traffic occurrence, which is beneficial for the sustainability of an airline firm.

Air Services Agreements (ASA) between countries that are based on the nine Freedoms of the Air are the tools for many governments, in order to liberalize their civil aviation regulations. Many of the well developed countries in the airline industry are tending to grant beyond traffic rights, which are the rights beyond the Fifth Freedom of the Air. Apart of the Freedoms of the Air, air liberalization is also dependent on the bilateral agreements of governments such as in free determination of capacity, free pricing regime or airline ownership and regime regulation (Xiaowen, Tae And Anming, 2010). Due to the strict air regulations of the governments, aviation itself did not benefit from globalization, despite this the airline industry made a significant contribution to the globalization of the world economy.

The results of liberalization were also studied. The effects of the deregulation on airline competition and air fare in United States domestic market, has been studied by the United States Government Accountability Office (GAO) in 2006, the average competitor in 1980 was 2.2 and in 2005 3.5, per market. During the same period the average fare decreased %40 (GAO, 2006). This proves that deregulation or in other words liberalization is supporting the economy to grow.

Another study of the Chinese market shows that liberalization is effecting not only the airlines positively but also the airport productivity. The results of increasing competition by liberalization is positively correlated with the Chinese airports productivity. (Chi-Lok and Zhang, 2009). The more a country's aviation regulations are liberalized the more the airport or airlines or other service providers within airline business grow.

Morrison and Winston (1989) stated that the result of their study showed that pursuit of regulations that allow airline competition and effective use of airports, increases the

benefit of liberalization. Pursuit of liberal regulations would also provide guidance for other industries which are affected by government regulations. The airline industry is a branch that is always in sight and popular. Positive developments will bring along awareness for clients, service providers or partners.

After 2003, the domestic air regulations have been changed in Turkey. Before, only the flag carrier Turkish Airlines was authorized to operate domestically. However after the deregulation in 2003, there was competition in the domestic market. Thus all carriers operating domestically were forced to develop new strategies to be in the market, considering the customer needs, reviewing the customer behaviour or observing their competitors. Prices were reshaped according to new market conditions and airlines managed their pricing strategy liberally and in a more efficient manner (Orhan and Gereke, 2013).

Since the industry is globalizing the first movers might be at an advantage in order to make an airline or airport productive; for countries which delay the deregulations it will be harder to be in the global competition (Ravi and Ravi, 1997). Fact and figures of airlines and airport in liberalized countries show that a conservative management style is stabilizing a market economy. As long as the regulations are not conservative and simplified, a market can simply grow. The growth is in a loop model; the more an airline grows the better passenger traffic grows, once the passenger traffic increases the airlines keeps growing.

CHAPTER III

DEFINING FREEDOMS IN THE AIRLINE INDUSTRY

3. Freedoms of the Air

The history of Civil Aviation Law & Regulations began very late compared to public law. In the early 20th century, the first conventions and meetings for international aircraft regulations were held. During this era, only a few countries joined the conventions, but the more aviation has grown, the more countries have joined. This section contains the history of civil aviation law and regulations.

The most important and effective convention was the Chicago Convention in 1944. The U.S. government invited 55 countries, and 54 of those attended the convention. At the end of the convention, 52 of the countries signed the Convention on Civil Aviation.

The initiative taken at the Chicago Convention was primarily to secure and ordinate the manner of the improvement, and also to establish air transportation services on the basis of equity of opportunities and economical operations.

As a result of the Chicago Convention, ICAO's (International Civil Aviation Organization) main authorization focused on a uniform code of practice, transvalues and procedures, and the organisation of the Civil Air Transportation. After a three-year period, the first formal ICAO meeting was conducted in Montreal in May 1947. Today, ICAO has 193 Member States and more than 12,000 Annexes that cover standards and recommended practices for Civil Aviation.

Despite the first official ICAO meeting being held in May 1947, the Freedoms of the Air were determined at the Chicago Convention in 1944 except for the First and Second Freedoms. The Freedoms of the Air are a cluster of commercial air transportation rights granting a state's airlines the concession to go in to another state's air space either to overfly it or to land.

It is obligatory to mention that the IASTA (International Air Services Transit Agreement) was adopted at the Chicago Convention for the First and Second Freedom of the Air. Since both freedoms were fundamental, a separate treaty was formulated. This treaty was not signed by all members.

The Freedoms of the Air were the basis of mercantile international air transportation route planning. Based on the needs of a state, multilateral or bilateral agreements are signed to allow use of the airspace or to operate to a selected destination. The Freedoms of the Air are the basis upon which the agreements are signed.

Freedoms of the Air consist of nine articles. These articles determine the rules of using an air space, and landing and departing to other countries other than the operators' countries. The First and Second Freedoms are categorized as the transit rights. The Third and Fourth Freedoms are categorized as traffic rights. The Fifth to Ninth Freedoms are classified as beyond traffic rights.

3.1 First Freedom of the Air

The First Freedom is one of the most fundamental rights. It grants permission to operate from country A to country C by overflying the air space of country B. Overflying a territory is allowed without landing, and it covers both commercial and non-commercial flights (Vallero Luigi, August 2004). It is obligatory for the operator to use the designated route declared by the territory owned member state. That is why the First Freedom of the Air is considered along with Second Freedom of the Air as the Transit Rights.

The First Freedom is for the member states of IASTA (International Air Services Transit Agreement) approved (IASTA Agreement, Article 1). As of spring 2020, 133 states are members. The Air Service Carriers must use the designated route determined by the member state, and the air laws of all member states must be considered individually. For instance, when dangerous goods are on board, the DGR (Dangerous Goods Regulations) of the concerned state's air space authority applies.

Airlines over flying a territory of a third country are to be charged by the respective member state. Fees depend on each state's decision. It is defined by IATA not to charge more than a local carrier with similar international services. Rates are calculated from the entry point to the the exit point of the third state's air space.



Figure 3.1. First Freedom of the Air

As another example, an aircraft departing from Spain with the destination of Germany has to use the air space of the France. In this example, the airline is permitted to overfly French air space according to the First Freedom of the Air regulation, without landing, and following the air route that has been determined by the French Civil Aviation Authority. There might be one or more than one country between the origin and destination.

3.2 Second Freedom of the Air

The Second Freedom of the Air is also considered as a transit right like the First Freedom of the Air. The difference is that the Second Freedom of the Air permits the airlines that carry passengers or cargo to land for fueling or for technical or emergency purposes. Embarking or disembarking of passengers or loading or unloading of cargo is not permitted (ICAO Manual, 2004).

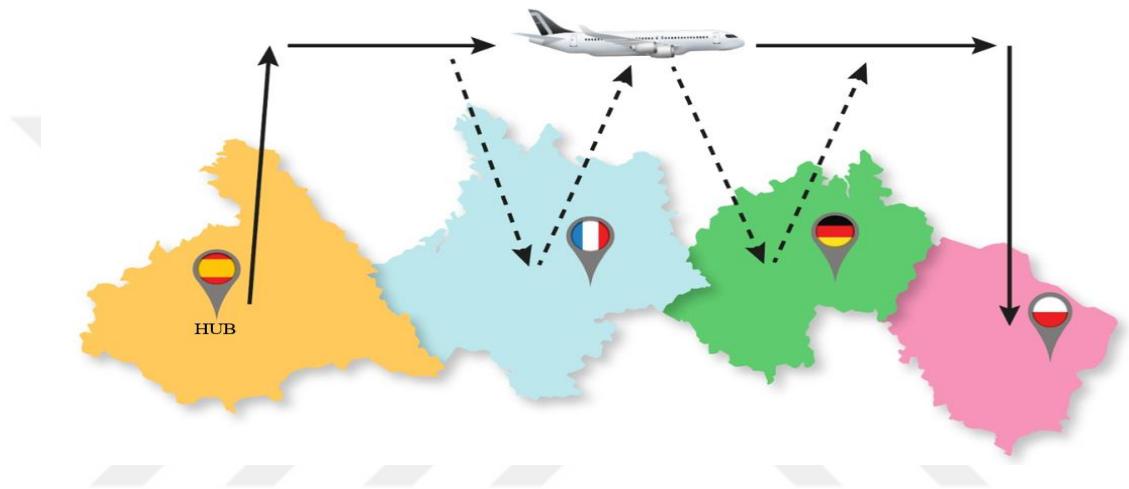


Figure 3.2. Second Freedom of the Air

In the earlier stages of Civil Aviation, this freedom was essential since the ranges of aircraft were not enough to fly long routes. For instance, a nonstop flight from London to New York was not possible until the invention of the jet engine. Airlines' extensive use of jet airplanes started in the mid 1960s. Until then, airlines had to plan a refuelling stop at airports such as Gander or Shannon. Even some Chinese or Japanese airlines which operated across the Pacific had to plan a refuelling stop at Anchorage in Alaska. The development of the jet engine airplanes made it unnecessary to stop at such minor airports. To operate nonstop on long-haul flights became a common practice in the late 1960s and 1970s.

The Second Freedom of the Air is still necessary since it permits landing in case of a technical issue or emergency while passing over a third country. For instance, an

airline flying from Spain to Austria has to overfly several countries such as France and Germany. Independent of how many countries' air space needs to be used, if there is need for a stop due to technical or emergency reasons, the Second Freedom of the Air would take effect and a landing would be granted.

Despite the fact that aircraft are now much more modernized and have extended range, some airlines are still using this Freedom for commercial reasons. In particular, airlines operating from/to Oceania from/to Europe or North America still have the need to stop for refuelling. For instance, Qantas Airways was operating a nonstop service between Perth and London. After the aircraft loss of Ukrainian International Airlines in Tehran, Qantas Airways decided not to use the air space of Iran due to safety reasons. Considering that Iraqi and Syrian air space is also not used, Qantas Airways had to make another detour via Russian air space which caused more flying hours. Therefore, a Perth to London nonstop was not possible; hence, after changing their route via Russian air space, Qantas Airways added a refuelling point in Singapore.

3.3 Third Freedom of the Air

The Third Freedom of the Air, as well as with the Fourth Freedom, are called the traffic rights. The description for the traffic right is an airline that carries passengers or cargo from one country to another country and vice versa. According to the Third Freedom of the Air, airlines are allowed to carry passengers or cargo from their base country to another country (ICAO, 2004) . This article only permits passengers to embark in the airlines own country and disembark at the destination country. Therefore, if a country has only a Third Freedom of the Air agreement with another country, it will not be possible for the airline to carry passengers or cargo from the destination country back to the base country.

It is a common practice that countries sign both agreements for the Third Freedom and the Fourth Freedom. While signing the agreement, both countries have to agree on the number of services in weekly rotation. All air services include commercial traffic.

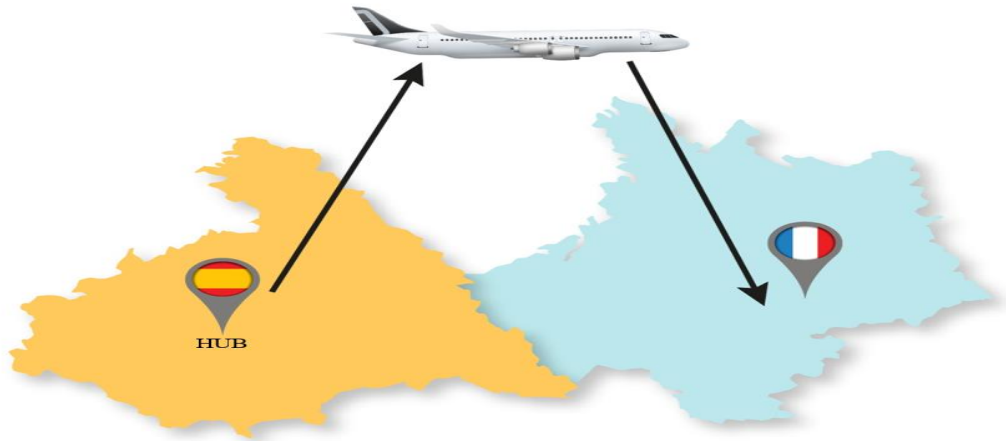


Figure 3.3. Third Freedom of the Air

3.4 Fourth Freedom of the Air

As mentioned above, the Fourth Freedom is classified as a traffic right. It is common that countries sign both agreements together which allows them to operate under equal conditions. Like the Third Freedom of the Air, the number of services has to be determined, and all services include commercial traffic. The Fourth Freedom of the Air is the traffic allowance for airlines to carry from other countries to the airline's base country (ICAO, 2004). The Third and Fourth Freedoms of the Air complete each other, hence point-to-point traffic is based on these freedoms.

For instance, a Spain-based airline operating from France to Spain and return is eligible to operate as a commercial flight only if both agreements are signed by both countries, Spain and France. The Third Freedom allows the Spain-based airline to operate commercial only from Spain to France. If there is no Fourth Freedom agreement between both countries, the Spain-based airline would not be eligible to operate commercial on the return. If both countries' airlines would like to operate and benefit from each other's market outbound and inbound, both countries have to sign the Third and Fourth Freedoms of the Air.

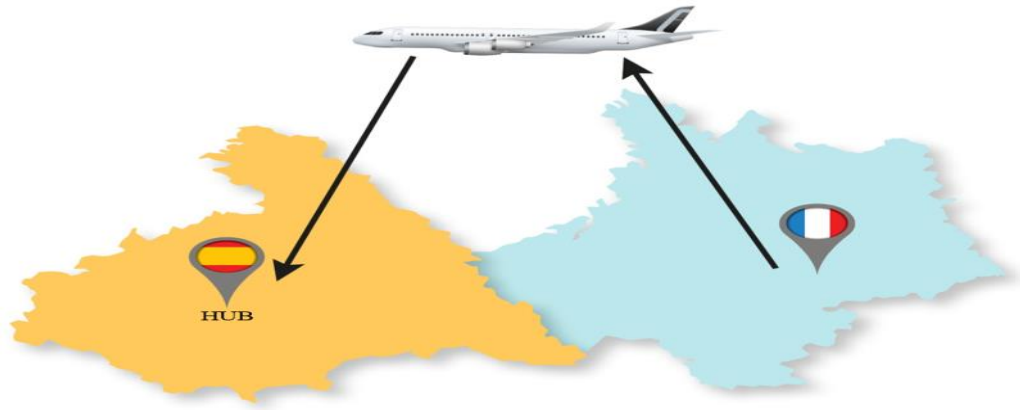


Figure 3.4. Fourth Freedom of the Air

3.5 Fifth Freedom of the Air

The Fifth Freedom of the Air allows airlines to operate as a commercial carrier between other countries other than the originating country, with the only condition being to start and end the trip at the home base (Rowell, David 2002).

The main purpose of the Fifth Freedom of the Air is to add value on routes with low demand by adding new destinations and merging the revenue of two or more destinations. For instance, Qatar Airways operates from Doha to Tbilisi; however, Baku is on the air route that has to be used by Qatar Airways. Operating separately to Baku and Tbilisi is not feasible. Therefore, Qatar Airways is operating Doha – Baku – Tbilisi and Tbilisi – Baku – Doha. The Fifth Freedom permits operating on this route while also promoting traffic between Baku and Tbilisi. This is a successful operation of a Fifth Freedom route. The allowance to promote traffic between Baku and Tbilisi turns the whole route Doha – Baku – Tbilisi and Tbilisi – Baku – Doha into a feasible route.

The Fifth Freedom up to the Ninth Freedom are the so-called beyond rights that take traffic within second and third states. That is why many states do not allow the Fifth Freedom since it is considered to be unfair competition. The negotiations for a Fifth Freedom of the Air may take a long time since approval of at least three states are necessary.

Another reason for airlines to use the Fifth Freedom of the Air is for network purposes on long-haul routes. For instance, Turkish Airlines operates from Istanbul to Bogota and Panama City. The flight time between Bogota and Panama City is 1 hour and 15 minutes. The flight time between Istanbul and Bogota is 13 hours and 20 minutes. An airline travelling long-haul flights has to consider the high costs. One of the strengths of the global airlines is their network. Even between two cities that are nearby, airlines would like to operate in all metropolitan cities in order to prove their network. In this case, Turkish Airlines is merging Bogota and Panama City passengers in Istanbul, and by operating both destinations together, it is expanding its network and saving extra cost, since both destinations do not have enough demand to operate separately.

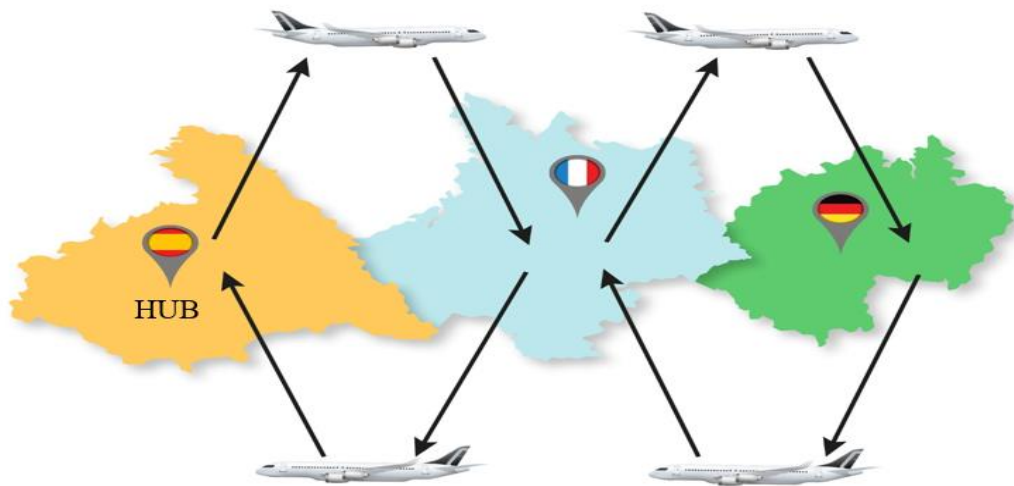


Figure 3.5. Fifth Freedom of the Air

As mentioned above, many countries do not allow the Fifth Freedom of the Air, due to protecting their own airline's market, but it is an opportunity to increase airport traffic, create revenue and support tourism. This will be evaluated within the next chapters.

3.6 Sixth Freedom of the Air

The Sixth Freedom of the Air is one of the drivers of the modern airline industry, especially for full-service carriers. It is a combination of the Third and Fourth

Freedoms of the Air that allows an airline to establish and operate a hub-and-spoke system. The difference between the Fifth and Sixth Freedoms of the Air is that the Sixth Freedom is based on the fact that the airline's own state is in a midpoint, rather than at the beginning or end. This allows airlines to carry passengers from one state to another state with a single stop at the airline's own state (Vallero Luigi, August 2004).

The Sixth Freedom of the Air is widely used and infrequently forbidden. However, there have been some cases where European or Oceanian airlines have sued Middle Eastern airlines for having advantages of fuel prices or due to their geographical locations, that causes unfair competition.

The basic purpose of the Freedoms of the Air is to provide equal, beneficial traffic rights to all states. However, the results of the bilateral agreements are not always mutually beneficial, since there are also conditions such as the size and geographical zone of the counterparts. For instance, a state with a lower population may benefit from a state with a much higher population on the Sixth Freedom of the Air traffic.

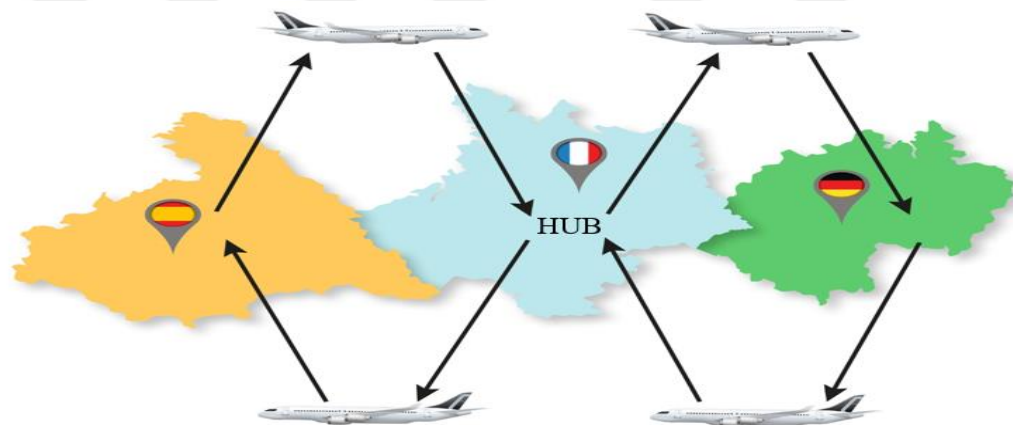


Figure 3.6. Sixth Freedom of the Air

The Sixth Freedom also covers an altered unofficial version which allows a modified cabotage right. Cabotage stands for carrying passengers or cargo within another country. However, the cabotage right in the Sixth Freedom is an indirect cabotage right since it is determined as passengers or cargo transferred from a domestic point to

another domestic point via another state, such as, passengers or cargo carried from Spain Barcelona to Madrid via France on a Spain-based airline.

3.7 Seventh Freedom of the Air

The Seventh Freedom of the Air is the privilege to carry passengers or cargo between two countries where neither state is the base of the carrier (Vallero Luigi, August 2004). It is not mandatory for the airline to operate at any stage back to its own state, such as a Spain-based airline operating between France and Germany. This is a rarely used freedom as is the Ninth Freedom of the Air. Both Freedoms are also called standalone cabotages.

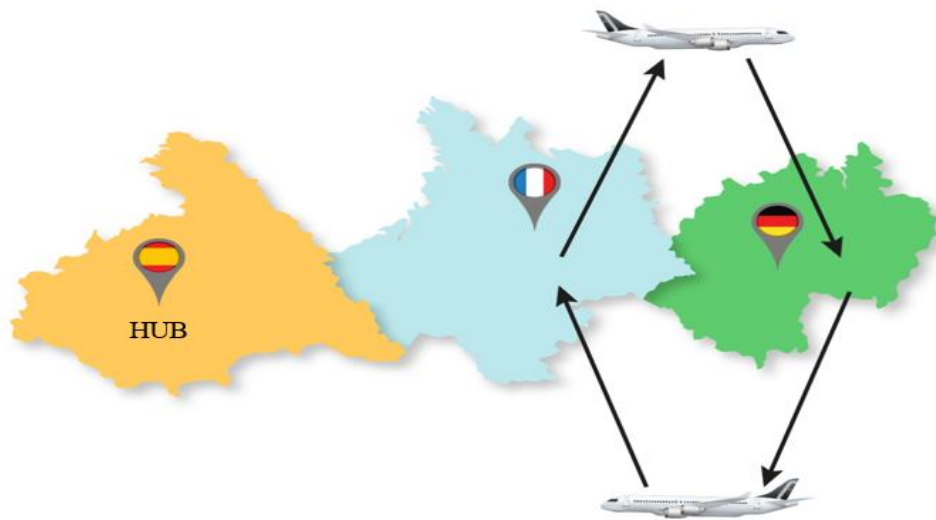


Figure 3.7. Seventh Freedom of the Air

3.8 Eight Freedom of the Air

If an airline wishes to fly between two cities of a single state, there has to be an Eighth Freedom of the Air agreement between the airline's state and the targeted state (Vallero Luigi, August 2004), such as a Spanish carrier operating between Paris and Toulouse in France.

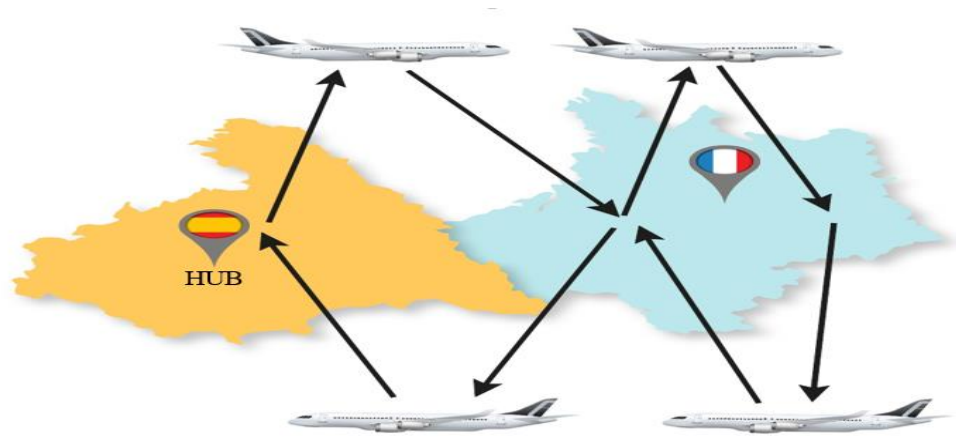


Figure 3.8. Eighth Freedom of the Air

The difference between the Eighth Freedom and the Seventh and Ninth Freedoms is that the Eight Freedom is not a standalone cabotage. It is a consecutive cabotage right. That means the journey has to start or end at the home base state of the airline.

3.9 Ninth Freedom of the Air

As mentioned in 4.8, the Ninth Freedom of the Air is another standalone cabotage traffic right. The difference between the Seventh Freedom of the Air and the Ninth Freedom of the Air is that the Ninth Freedom of the Air grants passenger or cargo transportation within a state's two cities without the need to be affiliated to the airline's base state (ICAO 2004). An example would be an airline based in Spain operating between Paris and Toulouse without the necessity to operate before or after to Spain.

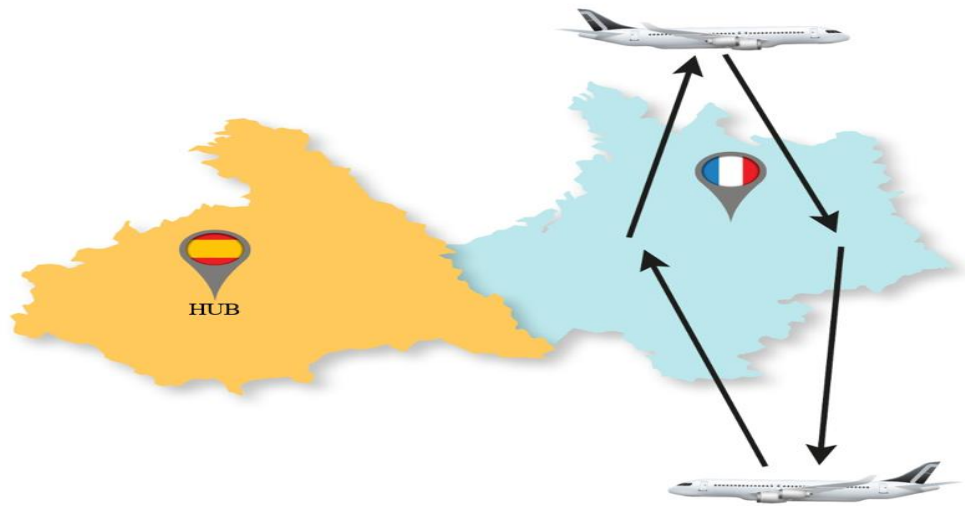


Figure 3.9 Ninth Freedom of the Air

CHAPTER IV

STUDY METHODOLOGY

On this dissertation quantitative method has been used along with descriptive submethod. Real passenger figures and airline figures operating to Singapore Airport and real figures of the carriers from Singapore to Hong Kong route has been evaluated. The determined figures are related to a Fifth Freedom of the Air operation, such as the numbers of the airlines operating between Singapore – Hong Kong, passenger numbers, passenger shares, revenue figures and average ticket prices. United Airlines Chicago - Singapore – Hong Kong – Singapore - Chicago flights of the year 2015 has been evaluated. Before calculating the effect of the 5th Freedom of the Air implementation in Ankara, real figures of Royal Jordanian Airlines were evaluated on the Amman – Moscow – Amman route. The data was collected from the author of this thesis. Some of the costs are variable costs, which has been mentioned within the related chapter.

The figures and numbers were collected primarily from the DDS (Direct Data Solutions), a tool developed by IATA. It is important to mention that airlines which are members of IATA are settling and billing their accounting through BSP (Billing and Settlement Plan) which is another tool developed by IATA. All sales figures of member airlines are reachable for IATA, such as route, issuing country, booking class etc. IATA is summarizing the data and marketing it back to the airlines for benchmark purposes through DDS. So the data that has been collected by the author are real figures and reliable.

While collecting the data a mutually successful 5th Freedom of the Air route and airlines were selected, which is Singapore – Hong Kong route of United Airlines. The data of the year 2015 has been collected, since the route has been suspended by United Airlines to implement a new strategy which is having a base in far east, Tokyo.

The collected data was evaluated by taking the proportion of the existed route, and reflected to another existing route of Royal Jordanian Airlines Amman-Moscow-Amman. According to proportions on the Singapore-Hong Kong-Singapore route a model was scripted for Royal Jordanian Airlines Amman-Ankara-Moscow-Ankara-Amman route. All costs and charges were considered to reach the final figures.

With this approach the aim of the author is to use the same method such as in Singapore, in order to create a new market with lower costs for airlines and new revenue opportunities for airports.



CHAPTER V

ANALYSIS OF THE APPLICATION OF THE 5th FREEDOM TO THE ANKARA AIRPORT

5.1 Current Status at the Singapore Changi Airport

The Republic of Singapore has a population of approximately 5,638,700 as of 2018 (World Bank, August 2019). It is a so-called sovereign island city state. Despite its low population compared to many other Southeast Asian states, Singapore has grown economically between 1965 and 1995 every year on an average of 6%. The Republic of Singapore is considered to have a liberal, reformist, vying, driving and trade-friendly economy.

All aspects mentioned above for the economy of Singapore are also recognized for the Singapore Civil Aviation Regulations. According to IATA figures, the contribution of Civil Aviation to the Singapore economy as of 2017 is \$36,6 billion (gross value-added contribution to the GDP). This is 11.8% of the total GDP with an employment of 375,000 manpower. These figures include air transport and sectors supporting air transport (UNWTO and IATA, 2017).

According to the airport operator Changi Group, more than 100 airlines are operating to more than 380 cities in about 100 countries. The airport has four terminals and two runways. Terminal 5 and a third runway are planned to be established in 2030. More than 65,6M passengers passed through the airport in 2019. Considering the above figures, Singapore Airport is very busy and working at maximum capacity (CAG, 2020).

On the other hand, Singapore International Airlines (SIA) is the flag carrier of Singapore, serving as a five-star airline (Skytrax, 2020). In FY 2019, Singapore Airlines carried 20,7M passengers of the total 65,6M passengers who passed through Singapore Changi Airport. Subsidiaries of SIA, Silkair and Scoot, both Low Cost Carriers (LCC) based in Singapore, carried together 15,3M passengers in 2019. The Singapore Airlines Group carried approximately 36M passengers (SAG,2020). Overall marketshare of the Singapore Airlines Group in Singapore is 55%; 45% of the remaining market share is distributed between non-Singapore-based legacy carriers and LCC's.

According to the Civil Aviation Authority of Singapore, the Republic of Singapore has signed an Air Services Agreement (ASA) with more than 130 states, and over 60 of the agreements include an Open Skies agreement (CAAS, 2020). An Open Skies agreement includes the Fifth Freedom of the Air. All agreements are bilateral and support the free market strategy of the interested states.

It is not mandatory for airlines to operate according to the Fifth Freedom of the Air even if there is a bilateral agreement between two states. The Republic of Singapore has signed more than 60 bilateral Open Skies Agreements which include the Fifth Freedom of the Air, but only nine airlines are operating from Singapore Changi Airport. For instance, Cathay Pacific Airlines based in Hong Kong is operating between Singapore and Bangkok, and SIA is operating only at six points as a Fifth Freedom carrier from, for instance, Moscow to Stockholm. It is not mandatory also for contracting partners to operate bilaterally. If an agreement has been signed, only one part of the contractors may use the opportunity to benefit.

5.1.1 Fifth Freedom Operation at the Singapore Airport and its Effect on the Singapore Economy

In light of the information above, the Fifth Freedom operation of United Airlines (UA) from Singapore (SIN) to Hong Kong (HKG) will be evaluated for results such as marketshare, benefits and loss of the operating airline and airport, and effects on the economy of Singapore will be analyzed.

United Airlines is a United States of America (USA)-based airline established on April 6, 1926 (Marvin E. Berryman, 2014). The United Airlines headquarters is in Chicago, USA, and it operates at eight different hubs with a fleet of 791 aircrafts as of May 2020. One of the United Airlines hubs is Chicago O'Hare Airport (ORD).

The route that will be evaluated on this dissertation is Chicago (ORD) – Singapore (SIN) – Hong Kong (HKG) – Singapore (SIN) – Chicago (ORD). Despite being a round-trip flight, this route allows the operating carrier, United Airlines, to market six different flights. Chicago to Singapore, Chicago to Hong Kong and Singapore to Hong Kong are the marketed flights on the outbound portion. The point of return on this route is Hong Kong, and the marketed flights on the inbound portion are the flights Hong Kong to Singapore, Hong Kong to Chicago and Singapore to Chicago. If United Airlines would operate only Chicago – Singapore - Chicago, the flights that are marketed would be only two flights; however, operating the flight as two segments and benefiting from the Fifth Freedom of the Air between the two destinations increases the number of marketed flights from two to six.

In the following articles, all flights will be evaluated separately, and finally, an overall evaluation of the route will be done. Also, the cost of a second flight and contribution to the Singapore Changi Airport will be evaluated. All numbers and figures are obtained from Direct Data Solutions (IATA, DDS) which is a data provider based on information gathered through IATA (International Air Transport Association) and BSP (Billing and Settlement Plan). Figures of FY 2015 will be evaluated since United Airlines ceased the two-segment operation in FY 2016 and continued them as separate flights. Once UA succeeded in SIN and HKG as an airline, UA operated separately to both destinations. United Airlines operated two flights a week on the route that is to be evaluated. Within FY 2015, there were a total of 107 flights.

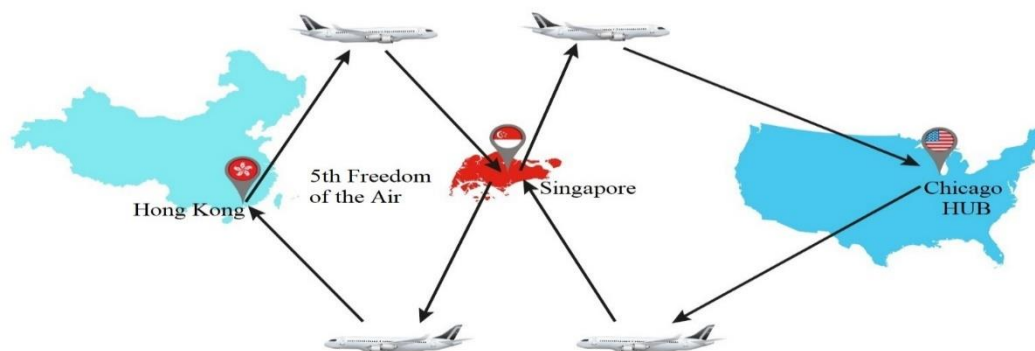


Figure 5.1. United Airlines 5th Freedom route

5.1.2 Flight Evaluation: Chicago – Singapore in Fy 2015

Table 5.1 evaluates the total number of 11,658 passengers who travelled within FY 2015 from Chicago to Singapore. United Airlines carried 5,900 passengers. Market share of United Airlines is 51%. The operations were flown with a Boeing 777-200 type of aircraft which has a capacity of 267 passengers. Total seats number of 28,569 was provided by United Airlines, and 5,900 seats had been occupied. The contribution to the load factor on the Chicago – Singapore marketed flight has been realized as 21%.

Table 5.1. Distribution of passengers travelling between Chicago-Singapore in FY 2015 (IATA, DDS)

Marketing Airline	Number of Passenger	Passenger Share
United Airlines	5.900	51%
All Nippon Airways	1.199	10%
Cathay Pacific Airways	1.158	10%
Emirates Airline	896	8%
Korean Air	559	5%
Others	1946	16%
TOTAL	11658	100%

5.1.3 Flight Evaluation: Chicago – Hong Kong in FY 2015

Table 5.2 evaluates the total number of 32,492 passengers who travelled within FY 2015 from Chicago to Hong Kong. United Airlines carried 11,504 passengers. Market share of United Airlines is 35%. United Airlines provided a total seat number of 28,569, and 11,504 seats had been occupied. The contribution to the load factor on the Chicago – Hong Kong marketed flight has been realized as 40%.

**Table 5.2. Distribution of passengers travelling between Chicago-Hong Kong
FY 2015 (IATA, DDS)**

Marketing Airline	Number of Passenger	Passenger Share
Cathay Pacific Airways	16,056	49%
United Airlines	11,504	35%
American Airlines	1,875	6%
Korean Air	1,011	3%
Air Canada	588	2%
Others	1,458	5%
TOTAL	32,492	100%

5.1.4 Flight Evaluation: Singapore – Hong Kong in FY 2015

Table 5.3 shows that a total number of 27,263 passengers travelled within FY 2015 from Singapore to Hong Kong. United Airlines carried 900 passengers. Market share of United Airlines is 3%. United Airlines provided a total seat number of 28,569, and 900 seats had been occupied. The contribution to the load factor on the Singapore – Hong Kong marketed flight has been realized as 3%. United Airlines captured 3% of market share and has not been a significant threat for the local carriers in Hong Kong and Singapore. At the end of the chapter, it will be evaluated more in detail.

Table 5.3. Distribution of passengers travelling between Singapore-Hong Kong in FY 2015 (IATA, DDS)

Marketing Airline	Number of Passenger	Passenger Share
Cathay Pacific Airways	13.314	49%
Singapore Airlines	12.490	46%
United Airlines	900	3%
Jetstar Asia	202	1%
American Airlines	147	1%
Others	210	0%
TOTAL	27.263	100%

5.1.5 Flight Evaluation: Hong Kong – Singapore in FY 2015

Table 5.4 shows that a total number of 23,981 passengers travelled within FY 2015 from Hong Kong to Singapore. United Airlines carried 914 passengers. Market share of United Airlines is 4%. United Airlines provided a total seat number of 28,569, and 914 seats had been occupied. The contribution to the load factor on the Hong Kong – Singapore marketed flight has been realized as 3%.

Table 5.4. Distribution of passengers travelling between Hong Kong-Singapore in FY 2015 (IATA, DDS)

Marketing Airline	Number of Passenger	Passenger Share
Cathay Pacific Airways	12.818	53%
Singapore Airlines	9.843	41%
United Airlines	914	4%
Jetstar Asia	196	1%
American Airlines	113	0%
Others	97	0%
TOTAL	23.981	100%

5.1.6 Flight Evaluation: Hong Kong – Chicago in FY 2015

Table 5.5 shows that a total number of 34,626 passengers travelled within FY 2015 from Hong Kong to Chicago. United Airlines carried 11,954 passengers. Market share of United Airlines is 35%. United Airlines provided a total seat number of 28,569, and 11,954 seats had been occupied. The contribution to the load factor on the Hong Kong – Chicago marketed flight has been realized as 41%.

Table 5.5. Distribution of passengers travelling between Hong Kong-Chicago in FY 2015 (IATA, DDS)

Marketing Airline	Number of Passenger	Passenger Share
Cathay Pacific Airways	16.966	49%
United Airlines	11.954	35%
American Airlines	2.195	6%
Korean Air	1.182	3%
Air Canada	524	2%
Others	1.805	1%
TOTAL	34.626	100%

5.1.7 Flight Evaluation: Singapore – Chicago in FY 2015

Table 5.6 shows that a total number of 11,977 passengers travelled within FY 2015 from Singapore to Chicago. United Airlines carried 5,533 passengers. Market share of United Airlines is 46%. United Airlines provided a total seat number of 28,569, and 11,954 seats had been occupied. The contribution to the load factor on the Singapore – Chicago marketed flight has been realized as 19%.

**Table 5.6. Distribution of passengers travelling between Singapore-Chicago in
FY 2015 (IATA, DDS)**

Marketing Airline	Number of Passenger	Passenger Share
United Airlines	5.533	46%
Cathay Pacific Airways	1.520	13%
All Nippon Airways	1.419	12%
Korean Air	737	6%
Emirates Airline	648	5%
Others	2.120	18%
TOTAL	11.977	100%

5.1.8 Overall Evaluation of The Entire Route

Figures and numbers given above on flight-by-flight evaluation are not enough to analyze and understand the routes' benefits and losses. Therefore, a summary of the entire route is necessary. In Table 5.7, the merged numbers of passengers per flight can be reviewed and accordingly the load factors and revenues. The blended fare on DDS is in USD.

**Table 5.7. Revenue of route Chicago-Singapore-Hong Kong-Singapore-Chicago
in FY 2015 (IATA, DDS)**

Number of supplied seats, boarded passenger, load factor and created revenue in FY 2015 on United Airlines flights from Chicago to Singapore					
Origin	Destination	Number of Passenger	Capacity	Load Factor	Created Revenue
Chicago	Singapore	5.900	28.569	21%	\$12.489.323
Chicago	Hong Kong	11.504	28.569	40%	\$13.697.148
	TOTAL	17.404	28.569	61%	\$26.186.471

Table 5.7.(continued)

Number of supplied seats, boarded passenger, load factor and created revenue in FY 2015 on United Airlines flights from Singapore to Hong Kong					
Origin	Destination	Number of Passenger	Capacity	Load Factor	Created Revenue
Chicago	Hong Kong	11.504	28.569	40%	-
Singapore	Hong Kong	900	28.569	3%	\$482.059
	TOTAL	12.404	28.569	43%	\$482.059

Number of supplied seats, boarded passenger, load factor and created revenue in FY 2015 on United Airlines flights from Hong Kong to Singapore					
Origin	Destination	Number of Passenger	Capacity	Load Factor	Created Revenue
Hong Kong	Singapore	914	28.569	3%	\$490.222
Hong Kong	Chicago	11.954	28.569	42%	-
	TOTAL	12.868	28.569	45%	\$490.222

Number of supplied seats, boarded passenger, load factor and created revenue in FY 2015 on United Airlines flights from Singapore to Chicago					
Origin	Destination	Number of Passenger	Capacity	Load Factor	Created Revenue
Hong Kong	Chicago	11.954	28.569	42%	\$15.668.041
Singapore	Chicago	5.533	28.569	19%	\$11.667.873
	TOTAL	17.487	28.569	61%	\$27.335.914

The revenue created through ticket sales on the entire route in FY 2015 is USD 54.494.666, and the load factor is 52,5%. Additionally, there was revenue such as Cargo/Mail revenue, extra baggage fees and onboard sales; however, in this dissertation, the focal point is revenue created through ticket sales.

In Table 5.8, the cost calculation of a Boeing 777-200 can be found for the Chicago – Singapore – Hong Kong – Singapore – Chicago route. These calculations are based on the figures from the aircraft manufacturer's database (Boeing, 2009).

**Table 5.8. Cost of route Chicago-Singapore-Hong Kong-Singapore-Chicago in
FY 2015 (in USD) (BOEING,2014)¹**

Departure	Arrival	Flight Time	Fuel/ Maintenance/ Depreciation Costs	Staff Cost	Catering Cost	Airport/ Handling/ De-icing/ Navigation Fees	Total Cost of Flight
Chicago	Singapore	16:30	\$120.000	\$9.653	\$1.465	\$31.117	\$162.235
Singapore	Hong Kong	03:50	\$30.000	\$2.413	\$1.465	\$7.780	\$41.658
Hong Kong	Singapore	03:50	\$30.000	\$2.413	\$1.465	\$7.780	\$41.658
Singapore	Chicago	16:30	\$120.000	\$9.653	\$1.465	\$31.117	\$162.235
Estimated cost of route per operation							\$407.786
Estimated number of operation							107
Estimated total cost of route							\$43.633.102

In Table 5.9, the net profit of the route can be seen, which is proof that the route is a feasible route. In this calculation, it is important to mention that United Airlines created an extra revenue of \$972.281 within FY 2015 between Singapore and Hong Kong. This amount was reached with the grant of the Singapore Civil Aviation Authority for the Fifth Freedom operation.

**Table 5.9. Total operating income of route Chicago-Singapore-Hong Kong-
Singapore-Chicago in FY 2015 (IATA, DDS)**

Total Cost of Route in FY 2015	\$43.633.102
Total Passenger Revenue Created in FY 2015	\$54.494.666
Total Operating income of Route in FY 2015	\$10.861.564

¹ Source of Navigation Fee, Landing Fee is the Singapore Civil Aviation Authority. Source of Office Rents, Bridge Fee, Ground Handling Fee, Lost and Found costs is the Changi Airport Group. Source of Fuel Cost is Boeing. Source of Technical Fee is SIA Engineering. Source of Staff Fee is SIA Group.

Operating to both Singapore and Hong Kong has led United Airlines to save double the cost and to have a higher load factor. It is obvious that having a double-flight operation has been for the benefit of United Airlines in terms of reaching feasible commercial results.

However, reaching feasible commercial results are not only in the interest of United Airlines. To allow such an operation should also be in the commercial interest of the Singapore Changi Airport and Singapore Civil Aviation. Therefore, in the next article, the figures of the Singapore Changi Airport as well as the effect on the Singapore economy will be evaluated.

5.1.9 Market and Revenue Share of United Airlines Between Singapore and Hong Kong

According to the figures of Direct Data Solutions supported by IATA in Table 5.10, United Airlines has captured only %3 of the total passengers who traveled between Singapore and Hong Kong. Total revenue created by all airlines operating between Singapore-Hong Kong is \$15.209.092; however, the captured revenue of United Airlines in this market is \$482.059, which proves that the revenue share of United Airlines is lower than %3. This also proves that United Airlines has provided lower fares compared to Singapore Airlines (SQ) and Cathay Pacific Airlines (CX) which are the dominating carriers on this route.

Table 5.10. Market share of carriers between Singapore-Hong Kong in FY 2015

(IATA, DDS)

Marketing Airline	Number of Passenger	Share of Passenger	Average Fare	Created Revenue
Cathay Pacific Airways	13.314	49%	\$605	\$8.050.152
Singapore Airlines	12.490	46%	\$520	\$6.491.711
United Airlines	900	3%	\$536	\$482.059
Jetstar Asia	202	1%	\$216	\$43.640
American Airlines	147	1%	\$429	\$63.038
Others	210	3%	\$505	\$78.494
TOTAL	27.263	100%		\$15.209.094

The market share of United Airlines between Hong Kong and Singapore has to be evaluated as well. In Table 5.11, it is stated that United Airlines has captured %4 of the total passengers who traveled between Hong Kong and Singapore. In terms of revenue share, United Airlines captured \$490.222 of the total \$14.495.798 which is slightly lower than %3. Both flag carriers of Singapore and Hong Kong (SQ and CX) are the dominating carriers.

Table 5.11. Market share of carriers between Hong Kong-Singapore in FY 2015

(IATA, DDS)

Marketing Airline	Number of Passenger	Share of Passenger	Average Fare	Created Revenue
Cathay Pacific Airways	12.818	53%	\$645	\$8.262.909
Singapore Airlines	9.843	41%	\$569	\$5.605.186
United Airlines	914	4%	\$536	\$490.222
Jetstar Asia	196	1%	\$191	\$37.526
American Airlines	113	0%	\$520	\$58.780
Others	97	0%	\$521	\$41.174
TOTAL	23.981	100%	\$604	\$14.495.798

According to the above figures and results, it is observable that United Airlines has not been a significant economical threat for both carriers, despite that both carriers are considered as some of the world's top airlines and use their airports as hubs.

In the next article, the economic effects of an extra operation at the Singapore Changi Airport will be evaluated.

5.1.10 Economical Effects of United Airlines Operation at the Singapore Changi Airport

Singapore Changi Airport is the hub of Singapore Airlines and its subsidiaries. Singapore Airlines has been ranked as the best airline several times by Skytrax, an independent evaluation office. Between 2001-2019, the airline was awarded the best airline in the world four times, and was awarded one of the top three airlines thirteen times. Between 2000 and 2020, the Singapore Changi Airport has been recognized as

one of the top three airports 21 times. Between 2013-2020, in sequence, it was awarded the world's best airport.

As of December 2019, CAAS (Civil Aviation Authority Singapore) has an agreement with 130 countries, and 60 of them are allowing the Fifth Freedom, which is mentioned by CAAS as an Open Sky Agreement including the Fifth Freedom. Only nine airlines are taking the opportunity to operate a Fifth Freedom route as seen in Table 5.12.

**Table 5.12. Airlines Operating 5th Freedom at Singapore Changi Airport
(CAAS)**

Airlines Operating Fifth Freedom at Singapore Changi Airport in 2019		
Departure	Arrival	Airline
Singapore	Bangkok	Cathay Pacific
Singapore	Brisbane	Emirates
Singapore	Denpasar	KLM
Singapore	Kuala Lumpur	Air Mauritius
Singapore	Kuala Lumpur	Ethiopian Airlines
Singapore	London LHR	Qantas
Singapore	Melbourne	Emirates
Singapore	Surabaya	China Airlines
Singapore	Sydney	British Airways

UA was not operating Fifth Freedom on the Singapore-Hong Kong route in 2019. United Airlines changed its Far East strategy and decided to have a hub at Tokyo Narita Airport. However, United Airlines is still operating to Singapore and Hong Kong separately via Tokyo.

Reading the CAAS agreement figures and Fifth freedom operating airline figures, we reach Table 5.13 below which is distinguishable in that only %15 of the %46 airlines which have the grant to operate Fifth freedom are using the opportunity.

Table 5.13. Civil Aviation Authority Singapore Agreements in 2019 (CAAS)

CAAS Agreements with other states	Number of Fifth Freedom Agreements	Percentage
130	60	46%
Number of Fifth Freedom Agreements	Number of Airlines operating Fifth Freedom	Percentage
60	9	15%

The figures above will be used to compare the data with Turkish Civil Aviation and Ankara Airport in order to understand the economic effects of a Fifth Freedom operation at Singapore Airport and to compare it with Ankara Airport; these figures, in turn, will lead us to calculate the results for Turkey and Ankara.

Operating an airline to an airport has many items to calculate which will be evaluated below for Singapore Changi Airport. Since airport fees as well as other fees depend on the type of aircraft, we will calculate the fees for the Boeing 777-200, which has been used for United Airlines operation. Also it is to be mentioned that passenger fees, catering and lounge fees will not be calculated since they would have been paid by dominating carriers as well, even though United Airlines would not have been operating this route. Table 5.14 shows the expenses of United Airlines operation in Singapore.

Table 5.14. United Airlines payments at Singapore Airport (in USD)
(Authors' Compilation)²

United Airlines payments at Singapore Changi Airport					
Item	Fee	Quantity per Operation	Quantity per Annum	Singapore Dollars	USD
Navigation Fee	\$85	4	107	\$36.380	\$25.830
Landing Fee	\$1.457	2	107	\$311.798	\$221.377
Office Rents	\$450	1	12	\$5.400	\$3.834
Staff Fee	\$5.000	5	12	\$300.000	\$213.000
Bridge Fee	\$225	2	107	\$48.150	\$34.187
Fuel Cost	\$78.000	1	107	\$8.346.000	\$5.925.660
Ground Handling Fee	\$2.500	2	107	\$535.000	\$379.850
Technical Fee	\$200	1	107	\$21.400	\$15.194
Lost and Found Costs	\$100	1	107	\$10.700	\$7.597
				TOTAL in USD per Annum	\$6.826.528

Calculation in Table 5.14 proves the benefit of the Singapore Changi Airport on the United Airlines Operation. United Airlines has captured the market of Singapore Airlines and Cathay Pacific around \$972,281, and if United Airlines did not operate the Fifth Freedom route between Singapore-Hong Kong, their captured revenue would have been split between Cathay Pacific Airlines and Singapore Airlines. In such a circumstance, the revenue that Singapore Airlines has lost would be reduced to less than \$972,281. On the other hand, United Airlines has created an economic value of approximately \$6,8M for the Singapore economy. The core of this dissertation is to prove that Civil Aviation Authorities are focusing on passenger sales and losing sight of the fact that there is another economical added-value for liberalizing the Civil Aviation regulations.

² Source of Navigation Fee, Landing Fee is the Singapore Civil Aviation Authority. Source of Office Rents, Bridge Fee, Ground Handling Fee, Lost and Found costs is the Changi Airport Group. Source of Fuel Cost is Boeing. Source of Technical Fee is SIA Engineering. Source of Staff Fee is SIA Group.

5.2 Current Status at the Ankara Airport

Ankara Airport is located in the center of Turkey. Ankara is the capital of the Republic of Turkey. The population in Ankara is 5,5M as of 2019 (TUIK, 2019). Even though Istanbul is the commercial center of Turkey, Ankara has industrial potential in terms of production and trade. The city of Ankara is also important for its political and diplomatic position.

However, compared to Istanbul Airport's air traffic, the growth of Ankara Airport and its air traffic has not been up to par. In 2006, a new terminal was built at Ankara Airport. This was a modern facility equipped with the latest technologies. In 2009, the Airports Council Europe (ACE) awarded the Airport the best Airport in the category of 5M-10M passenger traffic per annum. The Airport has also been chosen as the 17th most green airport in the world by The Green Organization. The Airport saves %25 of energy by its exhausted gas recycling system as well as producing power from natural gas (TAV Airports, 2020).

The Airport has two terminals, domestic and international, and two runways. It is equipped with 18 aerobridges and 18 passport counters for departures and arrivals. There are 108 check-in counters and a car park with a capacity of 4000 vehicles. The Airport's capacity is 25M passengers per annum. Despite its modern facility, the realized passenger numbers are lower than its capacity. Below in Table 5.15 are the numbers of passengers after the inauguration of the new terminal (TAV Airports, 2020).

Table 5.15. Ankara Airport by the number of passengers travelling through

Ankara Airport between 2006-2015 (in Millions) (TAV Airports)

	Domestic	International	Total	Growth Rate
2006	3,3	1,3	4,6	-
2007	3,6	1,3	4,9	6,52%
2008	4,4	1,2	5,6	14,29%
2009	4,5	1,7	6,2	10,71%

Table 5.15 (continued)

2010	6,5	1,3	7,8	25,81%
2011	7,1	1,4	8,5	8,97%
2012	7,7	1,6	9,3	9,41%
2013	9,4	1,6	11	18,28%
2014	9,6	1,4	11	0,00%
2015	10,6	1,6	12,2	10,91%
2016	11,6	1,5	13,1	7,38%
2017	13,8	2	15,8	20,61%
2018	14,4	2,2	16,6	5,06%
2019	11,4	2,2	13,6	-18,07%

As seen in Figure 5.2, the number of Airport passengers has increased within the last 14 years; however, the growth has been most favourable in domestic passenger traffic (TAV Airports, 2020). The CAGR (Compound Annual Growth Rate) in the domestic market is % 9,26, and in the international market the CAGR is %3,83. The total CAGR is % 8,05. The main reason for the growth in the domestic market is that Turkish Airlines founded its subsidiary Anadolujet, a low-cost carrier, based in Ankara for domestic operation. The international passenger traffic has not been sufficiently growing, as the city of Ankara and its catching area were not feasible for Turkish Airlines or Anadolujet to operate internationally.

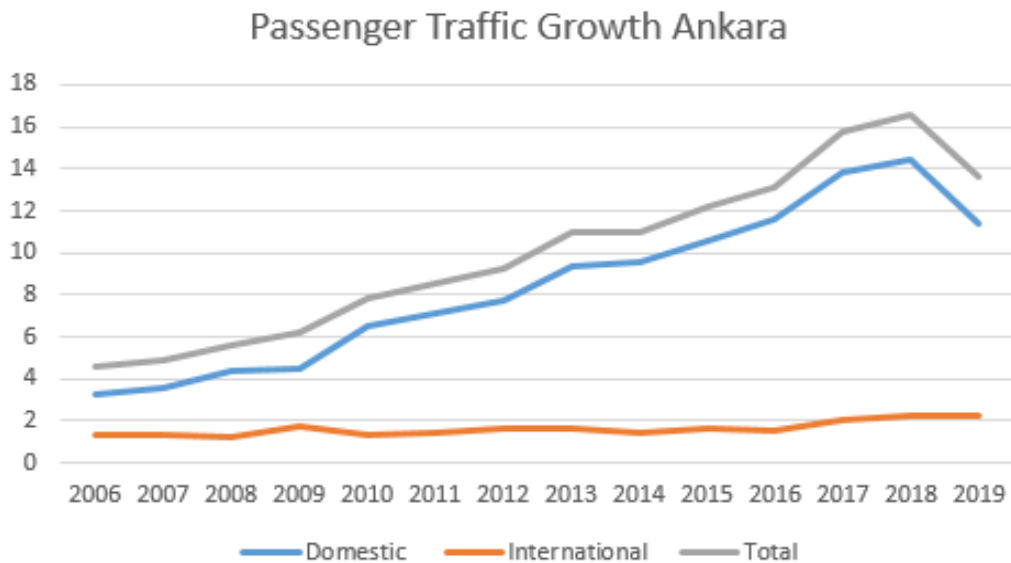


Figure 5.2. Growth of Ankara Airport in Millions (TAV Airports)

To turn Ankara Airport into an international hub has not been considered by the local airlines. For instance, Germany’s Lufthansa Airlines is using Munich and Frankfurt both as hubs. The local legacy airline Turkish Airlines (TK) preferred as its second hub Sabiha International Airport which is the second airport in Istanbul.

There are still airlines operating to Ankara which are not based in Ankara, as their type of traffic and method of operations are different. In Table 5.16, the non-Turkey-based airlines operating to Ankara Airport are listed. As seen on the list, there are eleven airlines from eight states operating to Ankara. Only six of those airlines are operating in a scheduled method. The airlines using the charter method are operating only on demand.

In Table 5.16, it is noted that there are some direct flights of Turkish carriers to different cities; however, many of them are operating as seasonal scheduled airlines (TAV Airports, 2019).

Table 5.16. Non-Turkey-based Airlines operating to Ankara (TAV Airports)

Non-Turkey-based airlines operating to Ankara			
Origin	Airline	Type of Flight	Targeted Traffic
Afghanistan	Ariana Afghan Airlines	Charter	Labour
	Kam Air	Charter	Labour
Azarbaijan	Azarbaijan Airlines	Scheduled	General
Iran	Iran Air	Scheduled	General
	Mahan Air	Scheduled	General
Iraq	Fly Baghdad	Scheduled	General
	Iraqi Airways	Scheduled	General
Qatar	Qatar Airways	Scheduled	General
Saudi Arabia	Saudi Arabian Airlines	Scheduled	Religious
		Scheduled	Religious
Turkmenistan	Turkmenistan Airlines	Charter	Labour
Ukraine	Ukraine International Airlines	Scheduled	General

In Table 5.17, it is noted that there are some direct flights of different Turkish carriers to different cities with different targeted traffic types. Many of them are operating as

seasonal scheduled airlines, which means they don't operate throughout the year. For instance, there are more than 3M Turkish labourers residing in Germany, and their travel period is April to September. Between October and March, it is not feasible for an airline to sustain the route; therefore, a seasonal scheduled method is preferred. Also religious carriers cancel their scheduled flights when the religious traffic season is over.

Table 5.17 Turkey-based Airlines operating from Ankara (TAV Airports)

Turkey-based airlines operating from Ankara			
Destination	Airline	Type of Flight	Targeted Traffic
Austria	Pegasus Airlines	Seasonal Scheduled	Labour
	Turkish Airlines	Seasonal Scheduled	Labour
France	Pegasus Airlines	Seasonal Scheduled	Labour
	Turkish Airlines	Seasonal Scheduled	Labour
Georgia	Turkish Airlines	Scheduled	General
Germany	Pegasus Airlines	Seasonal Scheduled	Labour
	Sun Express	Seasonal Scheduled	Labour
	Turkish Airlines	Seasonal Scheduled	Labour
Iraq	Pegasus Airlines	Scheduled	General
Italy	Turkish Airlines	Seasonal Scheduled	General
Jordan	Pegasus Airlines	Scheduled	General
Russia	Turkish Airlines	Seasonal Scheduled	General
Saudi Arabia	Turkish Airlines	Scheduled	Religious
	Onur Air	Charter	Religious
Ukraine	Pegasus Airlines	Scheduled	General
United Kingdom	Turkish Airlines	Seasonal Scheduled	General

The Ankara Chamber of Commerce and the Ankara Chamber of Industry both exerted their authority several times within the last 10 years in order to encourage Turkish Airlines to operate direct scheduled flights to European capital cities, with the purpose of shortening the travel times and saving energy since it is not convenient to fly via Istanbul for business. Each time, Turkish Airlines responded to their requests and started scheduled flights from Ankara to different cities such as Amsterdam, Brussels, Hamburg, London and Athens. However, the routes were not sustainable since demand was not enough to create a feasible revenue.

Ankara Airport has been running with low international passenger numbers for more than a decade. Using the low-cost carrier Anadolujet as a tool and turning the airport into an international hub has not been considered by Turkish Airlines. Even on labour or religious traffic types of routes, Turkish Airlines continued to operate from Ankara to several destinations only, and despite the lower costs and higher seating capacity, Anadolujet has not been considered as an option.

The point-to-point traffic demand from Ankara to many countries is not enough for a sustainable operation. This is realized from the figures of the international passenger traffic numbers as well as the number of foreign carriers operating to Ankara or from the number of routes Turkish Airlines does operate directly to other countries. Therefore, other tools of air traffic rights should be enforced in order to create more revenue and added value for the Ankara Airport as well as the Turkish economy.

5.2.1 Agreements and Strategy of Directorate of Civil Aviation Turkey

Civil Aviation has grown powerful in Turkey within the last 20 years. Turkish air space has been preferred for overflying purposes due to its safe and well-developed systems. Istanbul Airport has been turned into an international hub. In Table 5.18 and Table 5.19, the passenger traffic figures and total number of landings and departures at the Istanbul Airport from 2007 to 2019 can be reviewed (SHGM, 2020). The CAGR (Compound Annual Growth Rate) in domestic market is % 4,41, and in the international market the CAGR is % 10,75. The total CAGR is % 8,64

Table 5.18. Growth of Istanbul Airport-Passenger Numbers (SHGM)

	Numbers of Passenger Traffic			Growth Rate
	Domestic	International	Total	
2007	9.595.923	13.600.306	23.196.229	-
2008	11.484.063	17.069.069	28.553.132	23,09%
2009	11.416.838	18.396.050	29.812.888	4,41%
2010	11.800.833	20.342.986	32.143.819	7,82%
2011	13.421.536	23.973.158	37.394.694	16,34%
2012	15.279.655	29.812.307	45.091.962	20,58%
2013	17.218.672	34.079.118	51.297.790	13,76%
2014	18.542.295	38.152.871	56.695.166	10,52%
2015	19.333.873	41.998.251	61.332.124	8,18%
2016	19.133.533	41.281.937	60.415.470	-1,49%
2017	19.629.425	44.476.589	64.106.014	6,11%
2018	19.216.523	49.130.261	68.346.784	6,62%
2019	16.810.844	51.311.180	68.122.024	-0,33%

Table 5.19. Growth of Istanbul Airport-Aircraft Movements (SHGM)

	Aircraft Movements	Growth Rate
2007	243.363	-
2008	254.531	4,59%
2009	265.759	4,41%
2010	273.826	3,04%
2011	301.518	10,11%
2012	346.060	14,77%
2013	385.998	11,54%
2014	419.897	8,78%
2015	446.944	6,44%
2016	447.963	0,23%
2017	442.491	-1,22%
2018	447.419	1,11%
2019	446.450	-0,22%

The strategic planning of the Directorate of Civil Aviation and Airport Authority, and coordination with the carriers have been the reasons for remarkable growth. Increasing the number of agreements with other states, coordinating with local carriers and

adjusting the facilities in coordination with the airport operator as well as State Airport Authority have led to that growth. The CAGR is % 4,78.

In defiance of the growth, the agreements with other states and restricted liberalization of the regulations, a closed performance has not been reached at the Ankara Airport. As of May 2020, Turkey has bilateral agreements with 169 states, and none of the agreements include the Fifth Freedom of the Air. An evaluation of the Fifth Freedom of the Air and strategic planning will add value to Turkish Civil Aviation and the Turkish economy.

5.2.2 Fifth Freedom Operation at Ankara Airport and Possible Negative and Positive Economical Effects

In this article, granting a Fifth Freedom of the Air and operations effect will be evaluated. A chosen route of an airline that uses the airspace of Turkey and Ankara will be selected. To reach the final results, the quantitative method and the descriptive submethod will be used. The characteristic of the United Airlines Chicago-Singapore-Hong Kong-Singapore-Chicago route will be reflected, but real passenger figures and costs of the route will be used.

It is important not to choose a route with a high demand in order not to cause a loss for the regional carriers of Turkey; hence. granting the Fifth Freedom of the Air to foreign carriers for Ankara should be strictly evaluated, such as granting a Fifth Freedom of the Air between Turkey and Germany which is a seasonal high-demand route. Also the airline and the country that will be granted Fifth Freedom should be closely studied, since the Fifth Freedom will also be asked to be granted to the Turkish carrier as a mutual benefit. For this purpose, the fictitious route Amman – Ankara - Moscow – Ankara – Amman will be evaluated. The legacy carrier of Jordan's Royal Jordanian Airlines (RJ) will be considered.

As many legacy carriers do not use the Syrian airspace due to security reasons, neither does Royal Jordanian Airlines. Therefore, the Mediterranean Sea and Turkish airspace is used to reach Moscow. Royal Jordanian operates two flights from Amman to Domodedovo Airport Moscow. In this scenario, will consider that Royal Jordanian

Airlines will have a landing in Ankara and continue to Moscow after disembarking Amman – Ankara passengers and boarding Ankara – Moscow passengers. The return will be similar; after Moscow – Ankara passengers are disembarked, Ankara - Amman passengers will be boarded for the last flight of the route.

Royal Jordanian is operating on the Amman – Moscow – Amman route with an Airbus 320, with a capacity of 136 seats. This operation allows Royal Jordanian to market two routes: Amman-Moscow and Moscow-Amman. Once the Ankara flight has been added after granting the Fifth Freedom of the Air, four additional routes will be marketed by Royal Jordanian Airlines within one operation. The routes are Amman-Ankara, Ankara-Amman, Ankara-Moscow and Moscow-Ankara. At first, it is perceived that allowing the Fifth Freedom of the Air will effect the Turkish carriers negatively, which is slightly true, but after the evaluation of the flights and overall effects, there will be a clear positive result.



Figure 5.3. Royal Jordanian Airlines 5th Freedom route

5.2.3 Flight Evaluation: Amman - Ankara

There have been scheduled flights of Royal Jordanian Airlines to/from Ankara in the past years, but due to the low demand, the route has been suspended, and as of June 2020, a Turkish Low-Cost Carrier, Pegasus Airlines (PC), is operating from Ankara to Amman. Pegasus Airlines has few domestic flights such as Sabiha Airport Istanbul (SAW), Izmir (ADB) and Adana (ADA), which feed their Amman-Ankara-Amman operation. For that reason, an operation of Royal Jordanian Airlines between Amman-Ankara-Amman will not be a threat for Pegasus Airlines. Even though it is affected, it will not be considered as a negative effect of granting Fifth Freedom because operating Amman-Ankara-Amman is already a granted air freedom for Royal Jordanian Airlines as a part of the bilateral agreement.

Figures in Table 5.20 are based on DDS and are from FY 2019. Worthy of notice is that Royal Jordanian Airlines is in Table 5.20 as well with a total passenger number of 31 despite that there has not been any operation of the Airline. This should not confuse the reader since passengers are ticketed on Royal Jordanian Airlines stock but operation is realized either by Turkish Airlines or Pegasus Airlines. The direct operating airline is Pegasus Airlines only, and Turkish Airlines figures are passengers who traveled via Istanbul.

On the route Chicago – Hong Kong, the passengers of airlines operating direct were shared 59% Cathay Pacific Airways and 41% United Airlines. Therefore, we estimate that 41% of the passenger traffic of Amman-Ankara only (excluding onward traffic) will be captured by Royal Jordanian Airlines. Details of the Amman-Ankara market share of FY 2019 are shown below in Table 5.20.

Table 5.20. Amman-Ankara market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	10981	96%
Turkish Airlines	391	4%
Royal Jordanian	31	0%
TOTAL	11403	100%

The figures of passengers travelling from Amman-Ankara and onward using Ankara as a transfer point can be seen in Table 5.21. The traffic of Pegasus Airlines beyond Ankara such as Amman-Ankara-Sabiha International Istanbul will not be considered as traffic to be captured by Royal Jordanian Airlines. After a deduction of 8949 passengers of the total 10,981 passengers, the number of passengers travelling point-to-point Amman-Ankara remains as 2032 passengers.

Table 5.21. Pegasus Airlines Amman-Ankara passenger numbers and connections in FY 2019 (IATA, DDS)

Marketing Airline	Departure	via	Destination	Number of Passenger
Pegasus Airlines	Amman	Ankara	Sabiha International, Bodrum, Antalya, Gaziantep, Hatay, Trabzon, Dalaman, Konya, Adana, Kayseri, Sanliurfa, Denizli, Istanbul, Izmir, Ercan, Elazığ, Sivas	8.949
		-	Ankara	2.032

According to the figures above, the distribution of 2032 passengers between Pegasus Airlines and Royal Jordanian Airlines would be as in Table 5.22. This is an assumption of a Fifth Freedom operation of Royal Jordanian Airlines from Amman to Moscow via Ankara. Once the entire route has been evaluated and an assumption has been composed by the same method within the next section, an estimated cost and revenue will be calculated.

Table 5.22. Estimation of market share and passenger figures of Royal Jordanian Airlines on Amman-Ankara flight (Authors' Compilation)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	1198	59%
Royal Jordanian	834	41%
TOTAL	2032	100%

5.2.4 Flight Evaluation: Amman – Moscow

The Amman-Moscow flight evaluation will be calculated also based on the real figures; however, it will not affect the Turkish market and can be assumed as it is for further calculations since passengers of Amman-Moscow are the natural market of Russia and Jordan. The effect of operating this route will not be negative to Turkish carriers. Please see Table 5.23 for details of the passenger share. As Royal Jordanian Airlines is the only carrier between Amman-Moscow, we will assume it will retain its market share even though it has an intermediate landing in Ankara.

Table 5.23. Amman-Moscow passenger distribution in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Royal Jordanian	2825	72%
Siberia Airlines	254	6%
Aegean Airlines	235	6%
Egypt Air	229	6%
Gulf Air	153	4%
Others	234	6%
TOTAL	3930	100%

TK is not operating to DME Airport in Moscow; its destination airport at Moscow is Vnukovo International Airport (VKO). Shown in Table 5.24, there is a low share of Turkish Airlines from Amman to Moscow. Even though VKO Airport cannot be considered as a part of this calculation since it is a different destination, for informational purposes, Turkish Airlines passenger figures between Amman-Moscow (VKO Airport) are shown in Table 5.24.

Table 5.24. Amman-Moscow Vnukovo market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Turkish Airlines	883	98%
Fly Dubai	19	2%
Emirates Airlines	1	0%
TOTAL	903	100%

5.2.5 Flight Evaluation: Ankara – Moscow

The number of passengers who travelled from Ankara to Moscow are shown in Table 5.25. There is no direct operating airline from Ankara to Moscow (DME Airport). The total number of passengers who travelled from Ankara to Moscow is 540 in FY 2019. The market is dominated by Pegasus Airlines at 96% despite the fact that the passengers had to travel via Sabiha Gokcan Airport Istanbul (SAW).

Table 5.25. Ankara-Moscow market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	501	93%
Azerbaijan Airlines	32	6%
Lufthansa German Airlines	6	1%
Siberia Airlines	1	0%
TOTAL	540	100%

Just for informational purposes, the passenger travelling from Ankara to Moscow (VKO Airport) on the Turkish Airlines seasonal scheduled nonstop flights are shown in Table 5.26. According to the figures, the Ankara – Moscow (VKO Airport) market is almost completely dominated by Turkish Airlines, but on the Ankara - Moscow flight evaluation figures will not be considered since Moscow VKO Airport is a different market than Moscow DME Aripport.

Table 5.26. Ankara-Moscow Vnukovo market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Turkish Airlines	7.868	100%
Azerbaijan Airlines	12	0%
TOTAL	7.880	100%

According to Table 5.27, the assumption for the Ankara-Moscow Fifth Freedom operation of Royal Jordanian Airlines can be found. We know from the Singapore-Hong Kong United Airlines Fifth Freedom operation that United Airlines has captured only 3% of the market share. The calculation, reflects the same method on Table 5.27.

Table 5.27. Estimation of market share and passenger figures of Royal Jordanian Airlines on Ankara-Moscow flight (Authors' Compilation)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	492	91%
Azerbaijan Airlines	32	6%
Royal Jordanian	16	3%
TOTAL	540	100%

5.2.6 Flight Evaluation: Moscow-Ankara

The figures of the Moscow-Ankara flight are similar to the Ankara-Moscow flight. Leading the market by far is Pegasus Airlines, and their operation is via Sabiha Airport in Istanbul. Table 5.28 shows the passenger traffic figures of FY 2019.

Table 5.28. Moscow-Ankara market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	432	97%
Azerbaijan Airlines	11	2%
Lufthansa German Airlines	3	1%
TOTAL	446	100%

As before, the figures of the Moscow (VKO Airport)-Ankara passenger market will be evaluated as well, but not considered within the calculation for the same reason. Please see Table 5.29 for figures.

Table 5.29. Moscow Moscow Vnukovo-Ankara market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Turkish Airlines	6.859	99%
Azerbaijan Airlines	86	1%
TOTAL	6.945	100%

Table 5.30 shows the assumption of the Moscow-Ankara flight with the same method as the Ankara-Moscow flight. According to the assumption Royal Jordanian Airlines will capture only %3 of the passenger traffic.

Table 5.30 Estimation of market share and passenger figures of Royal Jordanian Airlines on Moscow-Ankara flight (Authors' Compilation)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	419	94%
Royal Jordanian	13	3%
Azerbaijan Airlines	11	2%
Lufthansa German Airlines	3	1%
TOTAL	446	100%

5.2.7 Flight Evaluation: Moscow-Amman

The Moscow-Amman market is dominated by Royal Jordanian Airlines just as on the Amman-Moscow flight. In order to see the figures of the market, please read Table 5.31. It is to be considered that Royal Jordanian Airlines will remain the dominating carrier even if a Fifth Freedom operation landing in Ankara is realized. With a two-flights-a-week sequence, Royal Jordanian Airlines has captured 77% of the market and reached a passenger traffic number of 3020. Compared to the Amman-Moscow flight the figure is 4% higher.

Table 5.31. Moscow-Amman market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Royal Jordanian	3020	77%
Siberia Airlines	329	8%
Aegean Airlines	296	8%
Emirates Airlines	75	2%
Qatar Airways	73	2%
Others	137	3%
TOTAL	3930	100%

5.2.8 Flight Evaluation: Ankara-Amman

Ankara-Amman is the final flight of the entire route. Similar to Amman-Ankara, Pegasus Airlines is the only non-stop carrier on this route. The passenger traffic figures of Pegasus Airlines will be calculated only for Ankara-Amman point-to-point. However, in order to prove the flight figures, please see Table 5.32 from the source DDS. The figures of Turkish Airlines are passengers who travelled via Istanbul since there are no direct flights of Turkish Airlines on the route. Royal Jordanian Airlines and Saudi Arabian Airlines passengers tickets are issued on their stock, which are not to be considered.

Table 5.32. Ankara-Amman market share in FY 2019 (IATA, DDS)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	9619	96%
Turkish Airlines	423	4%
Royal Jordanian	11	0%
Saudi Arabian Airlines	5	0%
TOTAL	10058	100%

We know from the Amman-Ankara flight that passenger traffic of Pegasus Airlines is not only point-to-point from Amman to Ankara. The numbers of passengers who boarded the ESB-AMM flight via another feeder flight of Pegasus Airlines has to be deducted from the total number of passengers who boarded Ankara-Amman. After the deduction, we will create the assumption of Royal Jordanian Airlines market share. Table 5.33 shows the figures of passengers arriving at Ankara via a feeder flight and departing from Ankara to Amman, which is a total of 7375, and after deducting the transfer passengers from the total passengers boarded in Ankara, the remaining amount is the point-to-point passengers which will be considered in our estimation. The remaining amount is 2638 passengers.

Table 5.33. Ankara-Amman passenger distribution in FY 2019 (IATA, DDS)

Marketing Airline	Departure	Via	Destination	Number of Passenger
Pegasus Airlines	Sabiha International, Izmir, Bodrum, Antalya, Trabzon, Gaziantep, Adana, Hatay, Kayseri, Dalaman, Adana, Konya, Denizli, Sivas, Sanliurfa, Samsun	Ankara	Amman	7.375

Table 5.33. (continued)

Marketing Airline	Departure	Destination	Number of Passenger
Pegasus Airlines	Ankara	Amman	2.638

As we have the point-to-point figures, the assumption calculation of Royal Jordanian Airlines operation in Ankara for the Ankara-Amman will be found below in Table 5.34. Calculation is based on the same method as on the flight assumption for Amman-Ankara. According to the figures in Table 5.34, the predicted loss of Pegasus Airlines on the route will be 1082 passengers of a total of 9619. On the other hand, Turkish Airlines, which carried 423 passengers in FY 2019, will not be significantly affected. Operating Ankara-Amman is Royal Jordanian Airlines already granted right, and even though there is a loss of Pegasus Airlines passenger numbers, it will not be considered as a negative result of granting Fifth Freedom of the Air for Royal Jordanian Airlines.

Table 5.34. Estimation of market share and passenger figures of Royal Jordanian Airlines on Ankara-Amman flight (Authors' Compilation)

Marketing Airline	Passenger Number	Passenger Share
Pegasus Airlines	1324	59%
Royal Jordanian	920	41%
TOTAL	2244	100%

Since flight-by-flight evaluation is finished in this chapter, overall route calculations will be made in the next section.

5.2.9 Overall Evaluation of the Entire Route

The overall evaluation includes estimated revenue, load factor and costs of Royal Jordanian Airlines Fifth Freedom operation on the route Amman-Ankara-Moscow-Ankara-Amman. While estimating the revenue of Amman-Moscow and Moscow-Amman real figures will be calculated and blended, the average fare on DDS will be used. For the routes Amman-Ankara, Ankara-Moscow, Moscow-Ankara and Ankara-Amman, revenue will be estimated by comparing the ratio between United Airlines

and Cathay Pacific Airways blended average fares in DDS on the routes Chicago-Singapore, Singapore-Hong Kong, Hong Kong-Singapore and Singapore-Chicago. The ratio of Royal Jordanian Airlines fares will be the same ratio as the United Airlines and Cathay Pacific Airways fare ratio. Using this method, the expected average fares of Royal Jordanian Airlines will be calculated and reflected to the total revenue.

5.2.10 Fare Ratio of United Airlines and Cathay Pacific Airways Flight by Flight

It is to be mentioned that fares are in USD. As a Fifth Freedom carrier, United Airways has a lower price strategy on all routes compared to the Cathay Pacific Airways as in Table 5.35. This proves that allowing a Fifth Freedom operation and liberalizing the Civil Aviation regulations provides competition and lower fares. This will be discussed in the last chapter of this dissertation. In Table 5.35, the average fares of each route and the ratios can be seen. The ratio of each flight will be used to define the approximate average Royal Jordanian Airlines fare using the Pegasus Airlines average fare as a scale.

Table 5.35. Fare ratio United Airlines and Cathay Pacific Airways Flight by Flight (IATA, DDS)

Marketing Airline	Origin	Destination	Average Fare	Fare Ratio between United Airlines and Cathay Pacific Airways
United Airlines	Chicago	Singapore	\$2.117	88%
Cathay Pacific Airways			\$1.861	
Cathay Pacific Airways	Singapore	Hong Kong	\$605	89%
United Airlines			\$536	
Cathay Pacific Airways	Hong Kong	Singapore	\$645	83%
United Airlines			\$536	
United Airlines	Singapore	Chicago	\$2109	94%
Cathay Pacific Airways			\$1975	

5.2.11 Expected Revenue and Load Factor of Royal Jordanian Airlines 5th Freedom Operation

In sections 5.2.3 to 5.2.8, we calculated the expected passenger numbers for Royal Jordanian Airlines which will lead us to define load factor, and as we calculated in chapter 5.2.10, the fare ratio between main competitors we will be able to continue to calculate the estimated revenue. The data that has been collected and analyzed will be summarized, and the benefit for Royal Jordanian Airlines and the disadvantages for the Turkish carriers as well as the Turkish economy will be discussed.

Royal Jordanian Airlines is operating in a weekly two-flight sequence to Moscow. Therefore, we will consider that it will keep the same sequence. The revenue that will be created through ticket sales for Royal Jordanian Airlines is \$153.346. The overall load factor of Ankara-Moscow-Ankara has been completed with 20% in FY 2019. The overall expected load factor for the entire route of Amman-Ankara-Moscow-Ankara-Amman would be expected to be 24% if the Fifth Freedom operation would have been realized. Revenue figures include only ticket sales; extra revenue would have been created as well such as extra baggage and inflight sales as well as cargo and mail fees. The details of the calculations can be found in Table 5.36.

Table 5.36. Expected revenue of Royal Jordanian Airlines (in USD) (Authors' Compilation)

Amman-Ankara							
Pegasus Airlines Passenger Numbers	Royal Jordanian Airlines Expected Passenger Numbers	Pegasus Airlines Average Fare	Royal Jordanian Airlines Expected Average Fare	Fare Ratio	Capacity	Expected Load Factor Royal Jordanian Airlines	Expected Revenue Royal Jordanian Airlines
1198	834	\$80	\$71	88%	14.688	5%	\$59.200
-	2825	-	\$217	-	14.688	19%	\$612.203
				TOTAL	14.688	24%	\$671.403

Table 5.36. (continued)

Ankara-Amman							
Pegasus Airlines Passenger Numbers	Royal Jordanian Airlines Expected Passenger Numbers	Pegasus Airlines Average Fare	Royal Jordanian Airlines Expected Average Fare	Fare Ratio	Capacity	Expected Load Factor Royal Jordanian Airlines	Expected Revenue Royal Jordanian Airlines
-	2825	-	-	-	14.688	19%	-
492	16	\$83	\$74	89%	14.688	3%	\$1.184
				TOTAL	14.688	22%	\$1.184

Moscow-Amman							
Pegasus Airlines Passenger Numbers	Royal Jordanian Airlines Expected Passenger Numbers	Pegasus Airlines Average Fare	Royal Jordanian Airlines Expected Average Fare	Fare Ratio	Capacity	Expected Load Factor Royal Jordanian Airlines	Expected Revenue Royal Jordanian Airlines
419	13	\$88	\$74	83%	14.688	3%	\$962
-	3020	-	\$190	-	14.688	20%	\$572.405
				TOTAL	14.688	23%	\$573.367

Ankara-Amman							
Pegasus Airlines Passenger Numbers	Royal Jordanian Airlines Expected Passenger Numbers	Pegasus Airlines Average Fare	Royal Jordanian Airlines Expected Average Fare	Fare Ratio	Capacity	Expected Load Factor Royal Jordanian Airlines	Expected Revenue Royal Jordanian Airlines
-	3020	-	-	-	14.688	21%	-
1324	920	\$100	\$94	94%	14.688	6%	\$92.000
				TOTAL	14.688	27%	\$92.000

5.2.12 Expected Costs of the Royal Jordanian Airlines 5th Freedom Operation

In this section, the costs of a flight route Amman-Ankara-Moscow-Ankara-Amman will be calculated. According to the results, it will be possible to calculate the approximate economic effect on the Turkish economy, which will be the last section of this chapter. However, before calculating the cost for the entire Fifth Freedom route,

the cost of the regular route of RJ from Amman-Moscow-Amman will be calculated. This will provide the approximate difference between both operations.

In Table 5.37, the approximate cost of the Amman-Moscow-Amman route in FY 2019 can be seen. The operational costs of the route is approximately 9.9M; however, the main driving force of airline passenger revenue has been only 1.25M according to DDS. This route is not feasible for Royal Jordanian Airlines, but in order to be a player in the industry, airlines have to keep operating even with a loss. It is to be mentioned that the realized costs of the route are lower than below calculation. The reason for that is that with a load factor of 20% on average, Royal Jordanian Airlines can not avoid cancellation of flights. According to the experience of former Ankara-Amman-Ankara flights which have been suspended after an operation of 11 months, the cancellation ratio has been %20. Therefore, we assume that on this route the costs in FY 2019 were %20 lower than the calculated costs. Variable costs such as catering have been calculated according to the average passenger figures.

Table 5.37. Costs of Royal Jordanian Airlines for Amman-Moscow-Amman flight (in USD) (Authors' Compilation)

Departure	Arrival	Flight Time	Fuel/ Maintenance/ Depreciation Costs	Staff Cost	Catering Cost	Airport/ Handling/ De-icing/ Navigation Fees	Total Cost of Flight
Amman	Moscow	04:30	\$40.000	\$175	\$280	\$5.400	\$45.855
Moscow	Amman	04:30	\$40.000	\$175	\$280	\$5.400	\$45.855
Estimated cost of route per operation							\$91.710
Estimated number of operation							108
Estimated total cost of route							\$9.904.680

In Table 5.38, the scenario of Amman-Ankara-Moscow-Ankara-Amman will be calculated. This evaluation provides us with the information of cost and revenue figures. As seen in the table above, the difference between both operations is \$0,6M. This low difference is an advantage for airlines to operate even for low market

potential. As the flight route from Amman to Moscow is via Ankara Flight Information Region (FIR), the airline operates without detour, which will make the airline save extra fuel costs.

Table 5.38. Expected costs for Royal Jordanian Airlines for Amman-Ankara-Moscow-Ankara-Amman flight (in USD) (Authors' Compilation)

Departure	Arrival	Flight Time	Fuel/ Maintenance/ Depreciation Costs	Staff Cost	Catering Cost	Airport/ Handling Fees	Total Cost of Flight
Amman	Ankara	01:30	\$16.000	\$175	\$280	\$5.400	\$21.855
Ankara	Moscow	02:40	\$25.000	\$175	\$128	\$1.400	\$26.703
Moscow	Ankara	02:40	\$25.000	\$175	\$410	\$1.400	\$26.985
Ankara	Amman	01:30	\$16.000	\$175	\$110	\$5.400	\$21.685
Estimated cost of route per operation							\$97.228
Estimated number of operation							108
Estimated total cost of route							\$10.500.624

There are still doubts from the view of the airline since costs will raise approximately \$0,6M, and expected revenue created is \$0.15M. It is to be considered that Royal Jordanian Airlines still can increase its passenger revenue by marketing Ankara from its other destinations which is not included in this dissertation, such as passengers from Khartoum (KRT) or Beirut (BEY) to Ankara. As mentioned before, it is possible to create extra revenue from excess baggage, cargo, mail and inflight sales. The negative discrepancy can be closed with the right strategies. For airlines, it has always been a part of their marketing strategies to fly to many destinations as often as possible. Therefore, it is predictable that airlines using the Turkish air space would prefer to have an intermediate landing by being granted the Fifth Freedom of the Air.

5.3 Negative and Positive Economical Results of 5th Freedom Operation at Ankara Airport

As mentioned in the previous sections, Turkish Civil Aviation has grown significantly in the past 20 years. Within the last few years, the growth rate has dropped. The reasons for the decrease in growth are more than one, such as the loss of the value of Turkish

Lira (TL) compared to United States Dollars (USD), political crises or the worldwide pandemic, or simply reaching the limit of the growth.

Freedoms of the Air and especially the Fifth Freedom of the Air should be used as a tool in a strategic way. This way, the revenue created at the airport, employment and effects on the Turkish economy can be increased. As we know from the calculations above, with an attractive Fifth Freedom operation for Royal Jordanian Airlines and two flights a week, the created value is estimated to be \$5.3M, and the expected passenger sales will be approximately \$0.15M. The positive effect of the operation on the Turkish economy can be expected to be \$5.15M. Civil aviation authorities are focusing on the market share and passenger capture of local carriers, but the authorities are overlooking the opportunity to increase revenue that can be created.

CHAPTER VI

CONCLUSION AND RECOMMENDATION

It is common knowledge that liberalization of the economy affects a state's economy positively (Fu, Xiawen, 2010). Civil Aviation liberalization has always been a question. The reason for the doubt is that Civil Aviation Authorities tend to protect their market. But authorities should be objective with respect to all airlines and should search the most beneficial strategies for Turkish aviation and the Turkish economy.

In our example of Singapore, the CAAS has been approaching liberalization slowly. As stated in Chapter 2, the CAAS has an ASA agreement with 130 states, and more than 60 of them are including Fifth Freedom. Despite a high number of Fifth Freedom agreements, the CAAS is benefiting from the operation and the created revenue. Their lost marketshare is around %3, but the created revenue is much higher. For the local carriers in Singapore, this is an opportunity to create higher service levels in order not to lose their markets, but also as agreements are based on mutuality, Singapore-based carriers will enjoy operating Fifth Freedom operations like Singapore Airlines operations Singapore-Frankfurt-New York and return. It is important to mention that according to the marketshare of United Airlines on the Singapore-Hong Kong-Singapore route, it is proven that passenger behaviour to support Fifth Freedom airlines is not very positive as United Airlines captured only 3% of the market even though United Airlines as a foreign carrier has provided lower fares. Many reasons could be mentioned for the behaviour of the passengers, but the main reasons are loyalty programs, brand awareness or emotional ties.

Competition in a market causes lowering of fares and increasing service levels, and this is a positive effect for clients. Once a service level of a product has increased and price has decreased, the total traffic will be positively affected for all servicing parts.

According to CAAS figures, %46 percent of 130 ASA are including Fifth Freedom of the Air, and only nine airlines are operating Fifth Freedom. Reflecting these figures to Turkish Civil Aviation, it is assumed that even if 169 ASA would include Fifth Freedom of the Air, 77 airlines would have the opportunity to operate such a route. However, the expected number of airlines to materialize such an operation is 11, which would be %15 percent of the total granted states, such as in Singapore.

The liberalization of the air rights will support carriers to optimize their network, cost etc., thus airlines will have the opportunity to sustain as a firm as well as on the route it operates. In the long term it will affect positively the consumer awareness and increase the traffic. Airline firms will need to increase their service quality and being more customer focused. The operation of an airline brings along an economic value, this economic value includes revenue created through an airline operating to a destination supports the governments to close the current account deficit. It supports a government to create workplaces. Each single passenger creates an economic value by passing through an airport, using a carpark, having dinner or shopping at the airport, thus other firms at the airport providing services, creates workplaces as well.

Being sustainable is the most crucial target for airlines, since the costs are very high and competition is very tough. Granting 5th Freedom of the Air to airlines will allow them to sustain in the market and to keep the economical positive support for the market. 5th Freedom operation should not be seen as a threat for local carriers, eventhough they are global player such as Turkish Airlines. As mentioned before Singapore Airlines or Lufthansa are global players with global hubs, however the management and civil aviation authorities of both countries do not consider it as a threat, furthermore it is considered as an opportunity to create new markets with more efficient economical results for the consumer, the airline as well as the local authorities and airports.

The doubts of the Turkish Civil Aviation Authority may be reassured within this thesis, but granting Fifth Freedom of the Air to foreign carriers is based on mutuality. Thus, even Turkish carriers will enjoy operating Fifth Freedom in markets other than Turkey, such as operating from Amman to Beirut as an opportunity for Turkish Airlines. It is recommended to the Civil Aviation Authority of Turkey to grant Fifth Freedom of the

Air to well-evaluated, selected states, which should include mutual benefits for both contracting parties.

However some limitations should be noted. Political, economical, pandemic crises may affect such an operation since these kind of crises are affecting the whole economy, not only the airlines industry. Also to be successful all parties such as airlines, airport operators or authorities should follow an aggressive sales tactic. To have higher service levels should be considered by the airline and airport managements. All mentioned items may affect the result of such an operation.

For future implications it is important to mention that before implementing the 5th Freedom of the Air all destinations should be well evaluated in order to find the optimized results and not to harm the own market. Also it is important to mention that not only 5th Freedom of the Air but also 7th, 8th and 9th Freedom of the Air can be used to reach better economical results, not only for the airline but also for the local economy. Therefore a further reasearch will make it evident to find the right model for the future of the airline industry, the regulations and its practice among airline, airport operators and local authorities.

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