Charles University

Faculty of Social Sciences

Institute of Economic Studies

MASTER'S THESIS

Demand for Turkey as Tourist Destination

Author: **Kemal Berk Fidanboy**

Supervisor: **doc. Ing. Tomáš Cahlík CSc.**

Academic Year: **2017/2018**

Declaration of Authorship

The author hereby declares that he compiled this thesis independently; using only the listed resources and literature, and the thesis has not been used to obtain a different or same degree.

The author grants to Charles University permission to reproduce and to distribute copies of this thesis document in whole or in part.

Prague, May 11, 2018

Signature

Acknowledgements

First of all, I would like to thank my supervisor doc. Ing. Tomáš Cahlík, CSc. for his guidance, useful comments and suggestions while writing this thesis. I would also like to thank doc. PhDr. Tomáš Havránek Ph.D., PhDr. Zuzana Havránková Ph.D. and prof. Ing. Michal Mejstřík CSc. for their useful advices and suggestions. Finally, I would like to thank my family and my friends for supporting me throughout my studies.

ABSTRACT

This master's thesis focuses on main determinants of tourism demand of Turkey. Analysis is made for 95 countries between 2007 and 2016 using panel data gravity model. Variables which are used in the analysis are economic variables (GDP per capita and relative prices), weighted distance, population and political variables which are terror and democracy index differences between tourist origin country and Turkey, internal political problem, which is coup d'état attempt in 2016 and foreign policy problems which are Gaza crisis with Israel and plane crisis with Russia. Key contribution of this thesis is to include political variables in the model, extend the data set and observe the time period which Turkey has the highest number of tourists and experienced sharp decrease afterwards. As for the estimation, three different models which are pooled Ordinary Least Squares, Fixed Effects and Random Effects are used. These models are compared with each other by performing different tests and it is founded out that Fixed Effects model is the most efficient one. For the results, it is founded out that except the political variables; other variables have expected significance and contribution, both positive and negative, to tourism demand of Turkey. Even though the internal and foreign political problems have the significant negative effect on tourism, democracy and terror index differences does not have the expected impact on tourism.

JEL Classification A12, C23, F14, Z3

Keywords Gravity Model, Panel Data, Tourism Demand, Turkey

Author's e-mail kberk.fidanboy@gmail.com

Supervisor's e-mail cahlik@fsv.cuni.cz

ABSTRAKT

Tato magisterská práce se zaměřuje na hlavní determinanty poptávky turistů po Turecku. Analýza je provedena na 95 zemích mezi lety 2007 a 2016 pomocí gravitačního modelu na panelových datech. Proměnné, které jsou použity jsou ekonomické proměnné (HDP na hlavu a relativní ceny), vážená vzdálenost, počet obyvatel, politické proměnné, které jsou rozdíly v Indexu demokracie a teroru mezi zemí původu turisty a Tureckem, vnitřní problémy (pokus o puč v 2016) a problémy zahraniční politiky (Krize v Gaze s Israelem a kauza ohledně letadla s Ruskem). Hlavní kontribuce této teze je zahrnutí politických proměnných do modelu, rozšíření datového vzorku a pozorování období s největším počtem turistů v Turecku, po kerém následoval prudký pokles. Pro odhad byly použity tři různé modely: Metoda nejmenších čtverců, Fixní efekty, Náhodné efekty. Tyto modely jsou vzájemně porovnány provedením různých testů a je zjištěno, že model Fixních efektů je nejefektivnější. Výsledně je objeveno, že kromě politických proměnných.ostatní proměnné měly očekávanou významnost a podíl, pozitivní I negativní na turistickou poptávku po Turecku. Přeztože vnitřní a zahraniční politické problémy mají významý negativní efekt na turismus, rozdíly v Indexu demokracie a teroru nemají očekávaný dopad na turismus.

Klasifikace JEL	A12, C23, F14, Z3
Klíčová slova	Gravitační Model, Panelová data, Poptávka po cestovním ruchu, Turecko
E-mail autora	kberk.fidanboy@gmail.com
E-mail vedoucího práce	cahlik@fsv.cuni.cz

CONTENTS

List of Tables viii
List of Figures x
Acronyms xi
Master's Thesis Proposal xii
1. Introduction 1
2. Analysis of Turkish Tourism 3
2.1. History and Development of Tourism 3
2.2. Types of Tourism 4
2.3. Share of Tourists 5
2.4. Foreign Arrivals Duration 6
2.5. Accommodation Capacity 7
2.6. Tourism Revenue 8
3. Literature Review 10
4. Data 19
4.1. Number of Tourists 20
4.2. GDP Per Capita 22
4.3. Weighted Distance 24
4.4. Population 28
4.5. Relative Prices 30
4.6. Democracy Index 35
4.7. Terror Index 38
4.8. 2016 Turkish coup d'état attempt 42
4.9. 2010 Turkey-Israel Gaza Crisis 43
4.10. 2015 Turkey-Russia Plane Crisis 44
5. Methodology 46
6. Results 50
7. Conclusion 60
8. References 62
9. Appendix 62

9.1. List of countries 66
9.2. Tourist Arrivals 67
9.3. GDP Per Capita 71
9.4. Distance 75
9.5. Weighted Distance 79
9.6. GDP 83
9.7. Population 90
9.8. Consumer Price Index 94
9.9. Exchange Rate 98
9.10. Relative Price 102
9.11. Democracy Index 106
9.12. Terror Attacks 110
9.13. Terror Index 114

List of Tables

Table 1: Number and Share of Tourists by Purpose of Visit in 2016 4
Table 2: Share of tourists according to continent and organization in 2015 5
Table 3: Countries with highest share of tourists in 2015 5
Table 4: Average Number of overnights between 2003 and 2016 6
Table 5: Accommodation Capacity between 1997 and 2016 7
Table 6: Tourism Income and Average Expenditure Per Capita between 2003 and 2016 8
Table 7: Types and Share of Tourism Expenditure in 2016 9
Table 8: Share of Tourism in GDP between 2006 and 2016 9
Table 9: Tourist Arrivals to Turkey between 2007 and 2016 20
Table 10: Descriptive Statistics for the Number of Tourists 21
Table 11: Descriptive Statistics for the GDP per Capita in $ 23
Table 12: Descriptive Statistics for the Distance in km 26
Table 13: Descriptive Statistics for GDP in $ 27
Table 14: Descriptive Statistics for Weighted Distance 28
Table 15: Descriptive Statistics for Population 29
Table 16: Descriptive Statistics for CPI (2010 = 100) 32
Table 17: Descriptive Statistics for Exchange Rate against TRY 34
Table 18: Descriptive Statistics for Relative Prices 34
Table 19: Democracy Index Score and corresponding Type of Democracy 36
Table 20: Democracy Index of Turkey between 2007 and 2016 37
Table 21: Democracy Index of top 10 tourist origin countries between 2007 and 2016 37
Table 22: Descriptive Statistics for Democracy Index 38
Table 23: Terror Index for Turkey and top 10 tourist origin countries between 2007 and 2016 ... 41
Table 24: Descriptive Statistics for Terror Index 42
Table 25: Hypothesis Testing and Preferred Models 49
Table 26: Descriptive Statistics for variables in Panel Data 50
Table 27: Expected signs for the coefficients 51
Table 28: Pooled OLS model results 52
Table 29: Pooled OLS model statistics 53

Table 30: Random effects model results 54
Table 31: Random effects model statistics 54
Table 32: Fixed effects model results 55
Table 33: Fixed effects model statistics 55
Table 34: Fixed effects model with indexes for Turkey results 57
Table 35: Fixed effects model with indexes for Turkey statistics 57
Table 36: Fixed effects model results without COUP variable 58
Table 37: Fixed effects model statistics without COUP variable 58
Table 38: Fixed effects model with indexes for Turkey results without COUP variable 59
Table 39: Fixed effects model with indexes for Turkey results without COUP variable 59

List of Figures

Figure 1: GDP Per Capita Development of the top 10 tourist incoming countries to Turkey between 2007 and 2016 23
Figure 2: Distance for the top 10 tourist incoming countries to Turkey 25
Figure 3: GDP Development of the top 10 tourist incoming countries to Turkey between 2007 and 2016 26
Figure 4: Population for top 10 tourist incoming countries to Turkey in 2016 29
Figure 5: CPI (2010=100) for Turkey between 2007 and 2016 32
Figure 6: TRY/USD rate between 2007 and 2016 33
Figure 7: Number of terror attacks in Turkey between 2007 and 2016 40
Figure 8: Travel Advice to Turkey by USA in August 2016 40
Figure 9: Number of tourists from Israel between 2007 and 2016 44
Figure 10: Number of tourists from Russia between 2007 and 2016 45

Acronyms

CIS	Commonwealth of Independent Sates
CPI	Consumer Price Index
CV	Coefficient of Variation
EU	European Union
FE	Fixed Effects
GDP	Gross Domestic Product
GLS	Generalized Least Squares
GMM	Generalized Method of Moments
GNP	Gross National Product
GTD	Global Terrorism Database
GTI	Global Terrorism Index
İHH	Foundation for Human Rights and Freedoms and Humanitarian Relief
LSDV	Least Squares Dummy Variable
MIPT	The National Memorial Institute for the Prevention of Terrorism
NGO	Non Governmental Organization
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
PCI	Price Competitive Index
PPML	Poisson Pseudo Maximum Likelihood
PPP	Power Purchase Parity
RE	Random Effects
TRY	Turkish Lira
UNWTO	World Tourism Organization
USD	United States Dollar

Master's Thesis Proposal

Institute of Economic Studies
Faculty of Social Sciences
Charles University

Author:	**Kemal Berk Fidanboy**	Supervisor:	doc. Ing. Tomas Cahlik CSc.
E-mail:	kberk.fidanboy@gmail.com	E-mail:	cahlik@fsv.cuni.cz
Phone:	777864966	Phone:	222112318
Specialization:	E&F	Defense Planned:	June 2018

Proposed Topic:

Demand for Turkey as Tourist Destination

Motivation:

As of 21st century, tourist arrivals to Turkey has been significantly increased and in 2005 (8 million tourists in 2000 and 21.2 million tourist in 2005) and Turkey becomes one of the top tourist destinations in the world. As of 2015, Turkey is in sixth place in highest tourist arrivals in the world. Another thing is that tourism holds a significantly important place in Turkish economy (12.5% of GDP in 2016). Even though tourism is significantly important for Turkey, it is seen that after the peak in tourist numbers in 2014, there is a sharp decrease in 2015 and 2016. Therefore, since the tourism is significantly important and the number of arrivals significantly varies in last 10 years, it is important to analyze to tourist inflows of Turkey and its determinants.

In the thesis, this analysis will be made by not only using economic indicators such as GDP, PPP, Exchange Rate but also political indicators such as democracy quality which significantly decreases in last 10 years. Moreover, Turkey is one of the most affected countries from terrorism and Turkey faces some political crises with other countries such as plane crisis with Russia in 2015 and Gaza Flotilla Raid with Israel in 2010. Therefore, it is important to determine tourism demand for Turkey in past 10 years with respect to democracy quality, terrorism and foreign policy.

Hypotheses:

1. GDP of tourist incoming country have positive effect of number of incoming tourists to Turkey
2. Terror attacks have negative effect on number of incoming tourists to Turkey
3. Internal political problems and problems with other countries have negative effect on number of incoming tourists to Turkey
4. Weighted distance between Turkey and tourist incoming country has negative effect on number of incoming tourists to Turkey

Methodology:

In order to test the tourism demand of Turkey, panel gravity model will be used. According to Morley et al (2014), basic gravity model for tourist arrivals depends on GDPs of the origin and incoming countries and the distance between the countries. According to Culiuc (2014), gravity model explains tourist movements well. However, as stated by Park et al (2014), basic gravity model has limitations such as lack of explanatory variables. Therefore, additional economical, geographical and political variables will be added as it is seen in next paragraph.

In order to test the hypotheses, Panel Data will be used and in the panel data, dependent variables are the annual number of international tourist arrivals to Turkey from different countries which the data are available between 2007 and 2016. Explanatory variables in panel data will be GDP of the origin country, Price Competitive Index, Democracy Quality, Distance, Terror Attacks and dummy variables for internal political problems of Turkey and origin country and foreign policy of Turkey. Finally and most importantly,

for the panel data, fixed effects will be used.

GDP and PCI data will be retrieved from World Bank Database. Since the distance is time invariant and cannot be used in fixed effects model, weighted distance will be used which is based on the distance between highest populated city of origin country and Turkish city with highest tourist inflows from origin country, relative GDP's and populations. Braake (2004) suggests that CPI is meaningless for international analyses due to various reasons. Therefore, instead of CPI, Price Competitive Index (PCI) will be used which depends on Power Purchase Index (PPP) and Exchange Rate.

According to Braake (2004), democracy quality is measured according to measurement method of Freedom House which includes political and civil liberties on a scale from one to seven. In order to improve this model, Economist Intelligence Unit's Democracy Index can be used which includes more variables. Terror attacks data will be retrieved from Global Terrorism Database and there are two ways to put the effect of terrorism into the model. It can either be added as the number of attacks in origin country and Turkey as suggested in Santana-Gallego et al (2016) or it can be added as Global Terrorism Index which is created by Institute of Economics and Peace. Last but not least, Turkey's internal political problems, foreign policy crises with other countries, origin country's internal political problems will be added as a dummy variable to the model.

Expected Contribution:

When the academic literature on tourism demand is examined, it is seen that in the case of Turkey, tourism demand has been examined in various articles and journals. However, those articles are relatively old and not cover last 10 years where Turkish Tourism has its peak and a sharp decrease after the peak. Therefore, this thesis will be used in academic literature.

Another contribution of this thesis is that, there are some articles and journals which investigate the effect of terrorism and democracy on tourism. However, those are again relatively old and not cover the case of Turkey where the terror attacks have been significantly increased and democracy standards of Turkey have been decreased in last 10 years.

Moreover, in the academic literature, there aren't any articles or journals which investigate the effects of internal and foreign political problems on tourism of Turkey. Therefore, this thesis will contribute to academic literature and these results can be used in practice to found tourism demand of other countries or can be used in similar researches in Turkey.

Outline:

1. Abstract
2. Introduction
3. Literature Review
4. Analysis of Turkish Tourism
5. Data
    a. Gross Domestic Product
    b. Price Competitive Index
        i. Power Purchase Parity
        ii. Exchange Rate
    c. Democracy Index
    d. Weighted Distance
    e. Terrorism
    f. Dummy Variables
        i. Internal Political Problems of Turkey
        ii. Foreign Policy Problems of Turkey
        iii. Internal Political Problems of Origin Country
6. Methodology
    a. Panel Data
    b. Hypothesis Testing

7. Results
8. Concluding Remarks
9. References

Core Bibliography:

Aslan, A., M. Kaplan & F. Kula (2008): "International Tourism Demand for Turkey: A Dynamic Panel Data Approach". MPRA No. 10601, 9/2008

Brakke, M. (2005): "International Tourism, Demand, and GDP Implications: A Background and Empirical Analysis". *Undergraduate Economic Review, Volume 1, Issue 1, 2004*

Culiuc, A.(2014): "Determinants of International Tourism*" IMF Working Paper NO:14/82, 5/2014*

Keum, K. (2008): "Tourism flows and trade theory: a panel data analysis with the gravity model". *Ann Reg Sci.44,* pp. 541-557

Krueger, A.B. & C. Johnson (2006): "Defining and Measuring Terrorism: macro-econometric evidence". *LSE Centre for Economic Performances.*

Morley C., J. Rossello, M. Santana-Gallego (2014): "Gravity models for tourism demand: theory and use*"*. *Annals of Tourism Research 48*,pp. 1-10

Park J. & S. Jang (2014): "An Extended Gravity Model: Applying Destination Competitiveness". *Journal of Travel & Tourism Marketing 31*, pp. 799-816.

Santana-Gallego, M.,J. Rossello-Nadal & J. Fourie *(2016): "*The effects of terrorism, crime and corruption on tourism". *ERSA Working Paper 595, 4/2016*

Saray, O. & K. Karagöz (2010): "Determinants of tourist inflows in turkey: Evidence from panel gravity model". *ZKU Journal of Social Sciences, Volume 6, Number 11, 2010*, pp. 33-46

Uysal, M. & J.L. Crompton (1984): "Determinants of demand for international tourist flows to Turkey". *Tourism Management Volume 5, Issue 4, 12/1984,* pp:288-297

Author **Supervisor**

1. Introduction

Tourism is one of the key economic sources for many countries in the world including Turkey. Turkey attracts many tourists for different countries form the world throughout the years due to its cultural sites, beaches and many other features. Therefore, investigating the tourism demand of Turkey is important to understand the factors which have positive and negative impact on tourist arrivals. This thesis can also be used as guide for both Turkey and other countries to understand the factors that affect the tourism demand. Moreover, with the correct policy implementations, tourism demand can be maximized for the countries with similar tourism characteristics to Turkey.

In this thesis, tourism demand of Turkey is investigated for 95 countries between 2007 and 2016. In the analysis, panel data gravity model is used. Since there are different estimation methods for panel data analysis, three commonly used methods which are pooled OLS, RE and FE models are used in the analysis and compared in terms of efficiency by hypothesis testing. For the tourism demand of Turkey, stated hypotheses are as follows:

- Decrease in democracy quality and increase in terror attacks will have negative impact on tourist arrivals
- Internal and foreign political problems of Turkey will have negative impact on tourist arrivals
- Economic factors will have both positive and negative impact on tourist arrivals for GDP per capita and relative prices respectively
- Distance will have negative impact on tourist arrivals
- Population will have positive impact on tourist arrivals

Even though there are articles about tourism demand of Turkey, this thesis contributes to the academic literature in a way that the dataset is widened which the analysis is made for 95 countries. Besides that, analysis is made for the period between 2007 and 2016 which Turkey has the highest number of tourists in its history and experienced a sharp decrease.

In most of the articles, economical and geographical factors are included in the analysis of tourism demand. As the key contribution, this thesis extends the analysis of tourism demand of

Turkey by including political variables. These variables are democracy index and terror index which higher democracy index indicates higher political stability and higher terror index indicates higher terror attacks. Besides these variables, internal and foreign policy problems are included in the model. As an internal political problem, coup d'état attempt in 2016 is added to the model. For the foreign policy problems which may have affect on tourism, Gaza crisis with Israel and plane crisis with Russia are added to the model. The thesis is structured as follows:

In Chapter 2, brief analysis of Turkish tourism is made. To start with, this analysis includes the history and development of tourism after the Republic of Turkey was founded in 1923. After that, common types of tourism and main purposes of visits for tourists are briefly explained. Besides that, share of tourists from different continents, organizations and countries are examined. Moreover, accommodation capacity of hotels in Turkey and number of overnight stays of tourists in different years are described. In this chapter, finally, tourism revenue of Turkey is investigated.

In Chapter 3, literature review about the tourism demand models is made. At first, basics of gravity equation and different type of estimation methods are investigated. Besides that, other academic researches about the tourism demand of both Turkey and other countries are investigated. These researches serve as a guide for the structure of the analysis.

In Chapter 4, variables that are used in the panel data gravity model are explained with historical data for top tourist origin countries to Turkey and reason for choosing these variables. These variables can be sorted as economic, geographical and political variables. Economic variables are GDP per capita and relative prices of the tourist origin country. Geographical variables are the weighted distance and population. Finally, as it is previously mentioned, political variables are democracy and terror indexes, internal and foreign policy problems.

In Chapter 5, methodology followed in the analysis is briefly explained. At first, different type of estimation methods are briefly explained. After that, hypotheses tests in order to determine which model is the most efficient one for the tourism demand of Turkey is made.

Finally, in Chapter 6, results of the analysis for the different models and hypotheses tests are given. In addition, besides the general model used in the analysis, different results are also investigated with using different variables and omitting certain variables.

2. Analysis of Turkish Tourism

2.1. History and Development of Tourism

After the Republic of Turkey was founded in 1923, first organization related with tourism was Travelers' Association which was also established in 1923. Later, in terms of first government interest, tourism was included as a branch of Ministry of Economics in 1934. In 1955, Tourism Bank was established whose aim is to fund private sector for establishing tourism facilities. After that, in 1957, tourism was first established in ministry level as Ministry of Press, Publication and Tourism.

After 1960s, in first (1963-1967) and second (1968-1972) five year development plans, development of tourism was emphasized. In 1972, as a great contribution to number of tourists, Association of Turkish Travel Agencies (TURSAB) was established. Due to establishment of TURSAB and five year economic plans, numbers of tourists significantly increase in 1970s.

"Despite its potential, however, Turkey was relatively late to develop its tourism industry compared to other destinations in the Mediterranean region and it was not until 1980s to start serious attempts were made (Yolal, 2016)." After the military coup in 1980, liberalization of economy starts and this also leads to a new chapter in tourism. These new liberal economic policies allow free market economy and increases investment in Turkey. Besides that, Tourism Encouragement Law was enacted in 1982. The Tourism Encouragement Law of 1982, that gave generous incentives to tourism investment, has resulted in exceptionally rapid growth in tourism in terms of volume, value, and physical infrastructure (Şahin, 1990).

At the beginning of 21st century, Turkey experienced its biggest economic crisis in 2001 and tourism is one of the key sectors that is affected from it due to lack of advanced preparations for the crisis. After the effects of crisis were decreased and with the new government in 2002, new five year development plan (2007-2013) and goals for 2023 were prepared which aims to present road map for the managerial and practical processes in the development of tourism industry.

2.2. Types of Tourism

Turkey attracts tourists for many different types of tourism such as congress, winter and nature tourism. However, main attractions of Turkey are the beach and cultural tourism.

Beach Tourism is Turkey's main attraction for incoming tourists. As of 2017, Turkey has the fourth highest number of blue flag beaches (446) and marinas (22) after Spain, France and Greece (Blue Flag Global, 2017). Top destinations for beach tourism in Turkey are Aegean and Mediterranean costs with cities such as Antalya, Muğla and İzmir.

Cultural & religious tourism is also important for Turkish tourism. Turkey has 17 UNESCO World Heritage Sites which is in top 20 in the world. Since Istanbul is the capital of three large empires which are Roman Empire, Byzantine Empire and Ottoman Empire, it contains main historical sites from these empires such as Hagia Sophia which is one of the world's most famous religious buildings which both served as church and mosque and currently serves as museum. According to Business Insider, İstanbul is the world 8th most visited city in the world in 2016. Other important cultural sites are Cappadocia, which is famous for fairy chimneys and early churches, and ancient cities such as Ephesus near İzmir and Troy near Çanakkale.

When purpose of visit of tourists in 2016 is investigated, purpose of travel, entertainment and culture has the highest share with more than 50% as expected. Besides that, purposes of visiting relatives and/or friends, shopping and business conferences also have significant shares. Data for purpose of visit is retrieved from Turkish Statistical Institute.

Table 1: Number and Share of Tourists by Purpose of Visit in 2016

Purpose of Visit	Number	Share
Travel, Entertainment & Culture	13980138	55.33%
Visiting Relatives & Friends	3671576	14.53%
Shopping	1545808	6.12%
Business Conference	1181888	4.68%
Medical Reasons	251809	1.00%
Education	83964	0.33%
Religion	45845	0.18%

2.3. Share of Tourists

Turkey attracts tourists from many countries in the world. However, it mostly attracts tourists from European countries. From Table 2, it is seen that in 2015, more than half of the tourists come from European countries. Moreover, 83% of the tourist arrivals from European countries are from OECD countries, which is total of 15870330 tourists. Besides that, CIS countries also have a significant share in total number of tourists in 2015 which most of the tourists come from Russia. It can be seen in Table 3, which data is retrieved from Turkish Ministry of Culture and Tourism.

Table 2: Share of tourists according to continent and organization in 2015

Continent / Organization	Number	Share
Total Europe	19102424	52.70%
Total OECD	17498852	48.28%
Europe OECD	15870330	43.79%
Total CIS	8134242	22.44%
Total Western Asia	3563993	9.83%
Total South Asia	2 596 932	7.17%
Total Africa	885887	2.44%

In Table 3, highest share of tourist arrivals of 10 countries can be seen in 2015. Data is retrieved from Turkish Ministry of Culture and Tourism. From the table, it is seen that except for USA, Georgia, Iran and Iraq, all other countries are in Europe. Moreover, countries which have common border with Turkey such as Georgia, Bulgaria, Iran and Iraq have high share as expected.

Table 3: Countries with highest share of tourists in 2015

Country	Number	Share (%)
Germany	5580792	15.4
Russia	3649003	10.07
United Kingdom	2512139	6.93
Georgia	1911832	5.27

Bulgaria	1821480	5.03
Iran	1700385	4.69
Netherlands	1232487	3.4
Iraq	1094144	3.02
France	847259	2.34
USA	798787	2.2

2.4. Foreign Arrivals Duration

Even though Turkey attracts many tourists, their duration of stay is also important for the economy. In Table 4, average number of overnights between 2003 and 2016 can be seen which data is retrieved from Turkish Ministry of Culture and Tourism. It is seen that number of overnights constantly decrease until 2012 but after 2012, there is trend of stability between 2013 and 2015 with 5.7 overnights and increase afterwards. From 2003 to 2016, there is 10.6% decrease in average number of overnights.

Table 4: Average Number of overnights between 2003 and 2016

Year	Number of overnights
2003	6.6
2004	6.5
2005	6.5
2006	6.4
2007	6.2
2008	6.2
2009	6.1
2010	6
2011	5.9
2012	5.6
2013	5.7
2014	5.7
2015	5.7
2016	5.9

2.5. Accommodation Capacity

By looking at the number of hotels and number of beds, economic effect of tourism can be understood. From Table 5, number of facilities, rooms and beds can be seen between 1997 and 2016 which data is retrieved from Turkish Ministry of Culture and Tourism. It is seen that, there is decrease in number of facilities between 1997 and 2009. In 2009, number of facilities, which are tourism operation licensed, is 754 which is the lowest number between 1997 and 2016. After 2009, number of facilities increase but still lower than the number in 1997. As of 2014, out of 4248 facilities, 16.1% are five star hotels but the highest share is on three star hotels with 27% (TURSAB).

Table 5: Accommodation Capacity between 1997 and 2016

	Tourism Investment Licensed			Tourism Operation Licensed		
Year	**Facilities**	**Rooms**	**Beds**	**Facilities**	**Rooms**	**Beds**
1997	1402	110866	236632	1933	151055	313298
1998	1365	116286	249125	1954	151397	314215
1999	1311	114840	245543	1907	153749	319313
2000	1300	113452	243794	1824	156367	325168
2001	1237	106683	229047	1998	177371	368819
2002	1138	102972	222876	2124	190327	396148
2003	1130	111894	242603	2240	202339	420697
2004	1151	118883	259424	2357	217664	454290
2005	1039	128005	278255	2412	231123	483330
2006	869	123326	274687	2475	241702	508632
2007	776	112541	254191	2514	251987	532262
2008	772	113487	258287	2566	268633	567470
2009	754	103119	231456	2625	289383	608765
2010	877	114771	252984	2647	299621	629465
2011	922	122364	267900	2783	319319	668829
2012	960	126592	273877	2870	336447	706019
2013	1056	139928	301862	2982	357440	749299
2014	1117	145648	309556	3131	384454	807316

2015	1125	146162	314194	3309	404462	850089
2016	1135	144616	312912	3641	426981	899881

2.6. Tourism Revenue

When total tourism income between 2003 and 2016 is examined in Table 6, even though tourism income is the lowest in 2003, average expenditure per capita is the highest. Similarly, highest number of tourist arrivals to Turkey is in 2015 but the tourism income in 2014 is the highest. It is also seen that the average expenditure per capita become lowest in 2016. From the latest data, it is seen that between 2015 and 2016, there is decrease of 29.7% in tourism income and 7.2% decrease average expenditure per capita. Data is retrieved from Turkish Statistical Institute.

Table 6: Tourism Income and Average Expenditure Per Capita between 2003 and 2016

Year	Tourism Income (000 $)	Expenditure Per Capita ($)
2003	13854866	850
2004	17076606	843
2005	20322112	842
2006	18593951	803
2007	20942500	770
2008	25415067	820
2009	25064482	783
2010	24930997	755
2011	28115692	778
2012	29007003	795
2013	32308991	824
2014	34305904	828
2015	31464777	756
2016	22107440	705

When sources of tourism revenue in 2016 are investigated, it is seen that almost 84% of the revenue comes from individual expenditures. Table 7 shows different types of revenue sources and it is seen that food and beverages highest share with 23.11%. International transport by

Turkish company and domestic transport also has significant share with total share of 22.81%. Moreover, revenues related with shopping which are mainly clothes & shoes, souvenirs and carpets & rugs has total share of 16.82%. Data for type of expenditure is retrieved from Turkish Statistical Institute.

Table 7: Types and Share of Tourism Expenditure in 2016

Type of Expenditure	Revenue (000 $)	Share
Food & Beverages	5108647	23.11%
International Transport	3269461	14.79%
Clothes & Shoes	2607763	11.80%
Accommodation	2507120	11.34%
Domestic Transport	1772267	8.02%
Souvenirs	1024129	4.63%
Health	715438	3.24%
Sports, Education & Culture	295109	1.33%
Carpets & Rugs	87053	0.39%
Tour Services	55804	0.25%

Tourism is one of the key sources of income for Turkey. In Table 8, share of tourism in total GDP can be seen between 2006 and 2016 which data is retrieved from Knoema. It is seen that share fluctuates between 12% and 14% in these 10 years and the highest share is in 2014 which also has the highest tourism revenue.

Table 8: Share of Tourism in GDP between 2006 and 2016

Year	Share
2006	12
2007	11.3
2008	11.8
2009	13.3
2010	11.3
2011	12.5
2012	12.2

2013	12.9
2014	13.8
2015	13.7
2016	12.5

3. Literature Review

In the article Gravity Equations: Workhorse and Cookbook, Head and Mayer (2013) explain the use of gravity equation for international trade. First of all, they defined the gravity features of trade data. These features are GDP and distance and the authors have two key features about the trade data based on the example for the trade flows between Japan and EU. Reason for choosing these countries are that all EU countries have the same policies on trade with Japan and they do not share any language, culture, religion and currency with Japan. First feature is that imports are positively correlated with the GDP of the receiving country. Second feature is that distance is negatively correlated with trade. From these features, Head and Mayer (2013) define the basic gravity equation which takes the account of GDP proportionally and systematic negative effects of the distance. Head and Mayer (2013) then make three definitions of gravity equations in trade. First definition (general gravity) is based on capabilities of exporter, characteristics of importer and accessibility of exporter to importer which varies between 0 and 1. Two important features of this definition are that each term enters multiplicatively and there are also third-country effects. Second definition (structural gravity) is based on value of production, value of production, value of importer's expenditure and multilateral resistance. This definition corresponds to larger set of countries and allows more complete calculation. Third definition (naïve gravity) is the general and restrictive version of structural gravity equation. After the theoretical definition of gravity equations, Head and Mayer (2013) introduces estimation methods. First model they introduced is the fixed effects model. FE model is based on the taking logarithms of the terms which are defined in the general gravity equation. They state that the fixed-effects model is the common use in practice and recommended by major trade economists. One disadvantage of this model is that, there may be computational problems due to estimation of large number of dummies in large time intervals. In order to solve these issues, second estimation technique is based on ratio of trade and trade with self. However, this technique also has a problem which is the hardness of measurement of trade with self.

As there are different methods for estimation of the gravity equation, it is important to define the strengths and weaknesses of each estimation technique. Davidova (2015) makes the comparison of different estimation techniques in the gravity model of trade and identifies advantages and disadvantages of each technique. Three main models which are used commonly defined for gravity equation of trade are pooled OLS, FE and RE. In pooled OLS model, main assumption is that variance of error is constant across observations. However, when the error term and explanatory variables are correlated, estimation becomes biased and inconsistent. In the gravity model, from the estimation of Head and Mayer (2013), it is seen that pooled OLS is poor estimator under the structural gravity model because the estimation is biased. In FE model, main aim is to remove the unobserved effects from the equation. FE model assumes that error term and explanatory variables are correlated. Main weakness of this model is that explanatory variables which are constant over time, such as distance, are neglected. Opposite to FE model, in RE model, it is assumed that there is no correlation between unobserved effects and explanatory variables. However, the main problem with this model is that the results are always biased.

Keum (2008) describes the panel data analysis for the gravity model not just only for international trade but also for the tourism. He suggests that tourism is also type of international trade which is based on not the transactions of goods and services but the people. He defines the general gravity model which is based on GDP and distance just like Head and Mayer (2013). Keum (2008) also describes that fixed effects model have some limitations for the gravity model. First of all, one advantage of FE is to allow heterogeneous intercepts across cross-sectional individuals compared to pooled OLS. However, even though fixed effects can capture individual and/or time specific effects from time variant variables, it cannot capture effects from time invariant variables such as distance.

Similar to Keum (2008), Morley et al. (2014) implements the gravity model for tourism in the article Gravity models for tourism demand: theory and use. They suggest that since tourism can also be considered as international flow of trade, gravity model can also be used for tourism data. Their model only includes the basic determinants which are distance and GDP and GDP is positively correlated but distance is negatively correlated with tourist inflows.

As the basic gravity equation and strengths and weaknesses are defined by many articles, another important issue is to determine the explanatory variables and estimation method that should be used in the model for different time intervals and different countries.

Even though this thesis focuses on tourism demand of Turkey between 2007 and 2016 using fixed effects model, there are previous studies which focuses on tourism demand of not just only Turkey but also other countries between different time intervals, different explanatory variables and different estimation techniques and it is important to analyze the outcomes of these other estimations for the tourism demand.

To start with, in order to determine the most common dependent and explanatory variables, time intervals and frequency, Lim (1997) makes the analysis out of 100 published articles. First of all, out of 100 journals published between 1961 and 1994, 56 of them uses annual data and 5 of them uses monthly data. Out of these 56 articles that use annual data, number of observations vary between 5 and 28 and frequencies vary between 1 and 6. Lim (1997) defines the general model which the dependent variable is the tourism demand and the explanatory variables are income of origin country, transportation costs, relative prices, exchange rates and qualitative factors for destination country. For the model, only log-linear single equations are used in 56 articles. As for the dependent variable which is the tourism demand, there are different alternatives. In 51 articles, number of tourist arrivals and/or departures are used which is followed by tourism expenditures and/or receipts in 49 articles. For the explanatory variables, income is the most commonly used variable in 84 articles which is followed by relative prices (73 articles), transportation costs (55 articles), and exchange rates (25 articles). Other explanatory variables such as seasonal factors, migration competing destinations-goods are used but not so common. For the income, GDP or GNP is the most commonly used variables. Relative prices depend on CPI of both origin and destination country and exchange rate. Transportation cost is mainly measured as the price of air travel. However, this is not effective way to measure transportation costs.

In terms of tourism gravity model and its determinants for Turkey, first article was written in Uysal and Crompton (1984). Their analysis is based on country by country approach rather than general model. In the article, first of all, Crompton and Uysal (1984) made a brief description of tourism market of Turkey. After that, they determine the variables for determinants of tourists for

Turkey. First one of these variables is income. Even though, gravity model is not mentioned in the article, it is stated that income has positive contribution to number of tourists as it is also stated by the basic gravity model definition of Head and Mayer (2013). Other variables are relative prices, exchange rates, promotional expenditure and transportation costs. However, they state that since it is hard to determine transportation costs since Turkey has equal access on both land, sea and air and also there is risk of multicollinearity because income and air fares are correlated, it is not used as a variable in the model. Besides these quantitative variables, dummy variable is used for political instabilities. Analysis is made for 11 countries using natural logarithm model and made two different models are use where the dependent variable is number of tourist and total tourist expenditures. It is seen that in both models, income, relative prices and exchange rates model have the expected significance and sign except few countries. However, it is seen that promotional expenditures of the origin countries are not significant in tourism demand. As for the dummy variable, it is seen that social and political instability has significant negative impact. Moreover, majority of the models have high R-squared values which indicate there is not significant multicollinearity. Even though, this model is similar to gravity model of tourism, it didn't take distance into account.

Different from Uysal and Crompton (1984), Icoz et al. (1998) makes the analysis of tourism demand of Turkey with including supply side factors. Analysis is made for 10 European countries for the years between 1982 and 1993. Dependent variable is number of tourists. Explanatory variables are CPI, exchange rate which is same with the Uysal and Crompton's (1984) model. In addition, number of licensed beds and incoming travel agencies are included in model. It is expected that there is positive correlation between number of tourists and number of licensed beds and travel agencies. OLS is used for the estimation. Except for three countries, R-squared value was high. Therefore, it is suggested that for these countries, number of observations can be increased or more explanatory variables can be added. It is seen that number of beds has slightly low effect on number of tourists. Results indicate that exchange rate and number of travel agencies have significant impact on number of tourists.

Aslan et al. (2008) make a panel data analysis for Turkey in the article International Tourism Demand for Turkey: A Dynamic Panel Data Approach. Analysis is made for nine countries between 1995 and 2014. Different from the previous models of Uysal and Crompton (1984) and

Icoz et al. (1998), they make panel data analysis. They suggest that using annual data will avoid seasonality and panel data have more degrees of freedom compared to time-series and cross-sectional data and this helps reducing problems such as multicollinearity and avoid omitted variable bias. Since their data includes lagged variable which is previous year's tourist expenditure ratio, they suggest that it is better to use GMM for estimation rather than FE and RE. In the model, dependent variable is defined as ratio of tourist expenditure of each origin country to total tourism expenditures in Turkey. As for the explanatory variables, demand side variables are real income per capita is defined which is related with GDP, CPI and population and relative prices. Supply side variables are the accommodation capacity, public investment ratio and dummy variables for Marmara Earthquake in 1999 and September 11 attacks in 2001. As opposite to expected, public investment ratio have negative effect on tourism demand. Therefore, it can be concluded that explanatory variables of origin country such as GDP, relative prices are more important than variables of the destination country which is public investment ratio in this case. Moreover, it is seen that Marmara Earthquake has positive impact on tourism demand opposite to expectations.

Saray and Karagöz (2010) make the panel data analysis for tourism demand of Turkey using gravity equation approach. They introduced two models which one of them takes GDP as variable and the other model takes GDP per capita as variable. They also introduced a weighted distance as an explanatory variable in order to make distance a time-weighted variable. The reason for that is the problem in the definition of distance and time-invariance of distance. Weighted distance depends on distance and the ratio of GDPs of tourist incoming country and world. Another variable used is the mid-year population of origin countries. Dependent variable is the number of tourists. They make the comparison on FE and RE and states that RE is better choice when estimating randomly drawn samples over a large population with Hausman test supporting their argument. From the result of model which uses GDP, it is seen that population has negative impact and the weighted distance and GDP has positive impact which is opposed what basic gravity equation states. Authors claim that GDP cannot explain the economic size of the population. Therefore, GDP per capita is better in order to analyze economic size. From the second model, it is seen that all variables become positive and weighted distance becomes significant. This indicates that number of tourist increase as the distance increases. They

concluded that GDP per capita is better fit in model because weighted distance becomes significant when GDP per capita model is used.

Görmüş and Göçer (2010) also make the panel data analysis of tourism demand of Turkey between 2000 and 2006 for 32 countries. It is stated that this articles adds more explanatory variable in the model and make the analysis for larger set of countries. However, the issue is that the time interval is not too long. The model has similar quantitative variables with previous models on Turkey such as GDP, distance, accommodation capacity, relative prices. In addition, dummy variables are added for domestic and international events such as 2001 Economic Crisis in Turkey and 2003 Gulf War. Moreover, effect of Turkish president and prime minister's visit to EU countries is also added to the model. For the analysis, it is stated that FE is not applicable due to short time span and large set of countries. Therefore, RE model is preferred in the analysis. In the results, it is seen that even though relative prices and exchange rates are significant, they do not have the expected sign. In addition, economic crisis and Gulf War has significant negative effect on tourism demand. From this result, it can be said that both internal and external political problems have impact on tourism. However, visits of Turkish politicians don't have any significant effect on tourism.

Most recent study on tourism demand of Turkey is made by Kaplan and Aktaş (2016). Analysis is made for 92 countries between 1996 and 2014. In addition to quantitative variables such as GDP and distance, dummy variables are added for border, 2008 Global economic crisis and analysis is made for different regions and organizations of the world such as OECD countries. Analysis is made using PPML. Even though this article investigates the tourism demand for large set of countries, it didn't include political and terror problems of Turkey which Turkey faced significantly especially after 2010.

Gravity of tourism is applied to other countries which is different on location, economical and political conditions as expected. In many articles, FE model is used in the analysis as it is suggested by Head and Mayer (2013). First of all, Brakke (2004) makes the analysis of tourism demand of USA using panel data for 85 countries using FE model. In addition to previous models, Brakke states that CPI is meaningless for the analysis because different base years, exchange rates and inflationary pressures prevent direct and effective comparison of CPI across different countries. Therefore, he introduced PCI which is based on PPP and exchange rates.

Higher PCI than the destination country indicates that there is less price competition in that country. Moreover, he also add political variable to measure political opportunities and freedom of the country. It is stated that FE model is preferred because the analysis is made for countries which have available data. Since in this thesis, analysis is based on countries which have available data, FE is more preferable according to argument of Brakke (2004). From the results, it is seen that political variable has negative significance which indicates that tourist prefer more stable countries in terms of politics.

For the FE estimation, Culiuc (2014) introduces weighted distance variable which depends on distance, GDP and population. By introducing more variables to the gravity model such as distance, common currency, PPP, direct flights, he estimated the determinants of tourist arrivals using FE. Results indicate R-squared value of 0.829 which is significantly high and indicate expected significance and sign both for quantitative and dummy variables.

Park and Jang (2014), makes the analysis of tourism demand with adding destination competitiveness using FE model. Destination competitiveness is based on factors such as culture, history, accessibility, safety, price competitiveness and political will. Analysis is done for 30 countries with highest tourist arrivals for a period between 1995 and 2009. It is stated that FE model cannot capture time-invariant effects such as distance and common language. In order to overcome this problem, one way is to add country-specific FE. From the results, it is seen that all of the variables except number of world heritage sites and roads have the expected sign and significance with R-squared value of 0.683 which can be considered as high. Since the model doesn't include other economic indicators such as relative prices, exchange rate and dummy variables for political situations, with addition of these variables, R-squared value can be further increased.

In the analysis of tourism demand of Romania, Karagöz and Selim (2014) uses 32 countries in the panel data model where the estimation is made using FE model. Authors introduced weighted distance variable which is based on ratio of populations and GDP's of origin and destination country which is based on approach of Head and Mayer (2002). In Head and Mayer's (2002) approach, weighted distance is only depends on ratio of GDPs. Other explanatory variables are GDP and GDP per capita for two different models. They also include dummy variables for if the country is a member of EU, Warsaw Pact and if the country has similar religion with Romania.

From the results, it is seen that GDP has positive and distance has negative impact on tourist arrivals as expected. As for the dummy variables, religious similarities and being member of Warsaw Pact has positive impact but being member of EU has negative impact.

Even though fixed effects model is suggested by Head and Mayer (2013), in many articles other models are used. In the article Cultural Effects on Inbound Tourism into USA: gravity approach (Vietze, 2012), pooled OLS and RE estimations are used. Since the model includes time invariant variables such as distance, FE cannot be applied. Model includes the GDP, distance, PPP conversion factor, and distance from equator for climate estimation. Finally, when the results of pooled OLS and RE are compared, it is found out that RE is more preferable.

Greece is one of the most tourist attracting countries in Mediterranean and one of the key competitors of Turkey in tourism. Chasapopoulos et al. (2014) makes the panel data analysis for 31 countries over the period from 2001 to 2010. Their model includes GDP, relative prices and distance as it is also used in other models. Besides these variables, they added trade variable and political stability. However, most important contribution is that they added dummy variables for competitive prices between tourist attracting countries in the region such as Italy, Croatia and Turkey. Model is estimated using GMM. From the results, it is seen that trade and political stability has positive impact on tourism as expected. Moreover, competitive price between Greece and Turkey has negative impact on tourism on Greece. Therefore, it can be concluded that among countries which have similar tourist attractions, tourist prefer countries which offer same services with lower prices.

Llorca-Vivero (2008) adds impact of terrorism to tourism demand using gravity model. Analysis is based for tourists from G-7 countries to 134 destinations between 2001 and 2003. Variables in the model are population, real GDP, distance, PPP and dummy variables for border and language. Moreover and most importantly, he adds political variable and terrorism for the destination country. In order to measure political freedom, data from Freedom House of Index of Political Rights is used. This index consists of two variables which are political rights and civil liberties. Since, these variables are highly correlated, instead of choosing one of them, average is taken for the countries. Measurement of terrorism is based on MIPT for the destination country. Author introduces different measurement types of terrorism which is based on international and domestic number of incidents and number of victims. Therefore, there are 6 different models for the model

which is based on total, international and domestic incidents and number of victims. Estimation is based on OLS and the results indicate that political freedom has significant effect in tourist numbers. Therefore, it is important to add this variable to the model of tourism demand of Turkey. As in case of terrorism, highest effect on tourism is caused by total number of international terrorism incidents. When another model is introduced which takes different terrorism measurement types as explanatory variables, it is seen that highest significance is on average international terror incidents per 100000 inhabitants and domestic incidents are insignificant.

Like Llorca-Vivero (2008), Santana-Gallego et al. (2016) investigates the effect of terrorism on tourism. Different from Llorca-Vivero (2008), this article measures terrorism as difference of incidents between origin and destination country and it is negative if number of incidents is lower in destination country. Therefore, it is expected to have negative coefficient. From the results, it is seen that the difference of terror attacks has significant negative effect as expected. However, since the time span is short for this analysis of Llorca-Vivero (2008) and effects of terrorism can be different for Turkey due to significantly large number of incidents, new variable of terror can be introduced which is not only based on destination country but the difference of effects of terrorism of origin and destination country as in the case of Santana-Gallego et al. (2016). Therefore, by this approach, both domestic and international terror incidents can be captured by the model. Same approach can also be implemented for the political variable. Instead of political freedom of destination, difference between origin and destination countries can be better approach.

4. Data

In this chapter, the variables that are used in the panel data are explained. In the panel data, the dependent variable is the number of tourists which is the most common dependent variable used when making an analysis about international tourism demand of a country. Lim (1997) states that in 51 out of 100 articles about international tourism demand, number of incoming tourist is used as dependent variable.

In the panel data analysis, there are 9 explanatory variables. These variables are used to determine economics, geographical and political factors affecting international tourism demand to Turkey.

Lim (1997) states that in 83 articles, income is used as an explanatory variable for the tourism demand. Income can be measured in terms of GDP, GNP or GDP per capita. Saray and Karagöz (2010) make the panel data analysis using both GDP and GDP per capita and conclude that GDP per capita is a better approach. Therefore, in this thesis, GDP per capita is used in order to measure the effect of income on countries that have tourist inflows to Turkey.

Another economic variable used as an explanatory variable is relative prices Lim (1997) in 73 out of 100 articles; relative prices are used in order to determine international tourism demand. In order to measure relative prices, formula which is based on CPI and exchange rate is used

In order to measure geographical factors that affect the tourism demand, transportation costs can be used. However, it is not possible to measure transportation costs in certain and effective way. Therefore, instead of transportation costs, distance will be used as an explanatory variable. However, in order to use FE model, weighted distance variable must be introduced. The reason for that is that since distance is a time-invariant variable, it will cause collinearity in the FE model and will be omitted. Therefore, as suggested by Saray and Karagöz (2010), weighted distance which is based on distance and GDP will be used in the analysis.

Besides these explanatory variables, population of the tourist origin country is also important variable to determine tourism demand of Turkey.

In order to measure political factors that affect the tourism demand to Turkey, democracy quality and the terror index based on number of terror attacks will be used.

Finally, internal political problems of Turkey and foreign policy problems which may have an effect on tourism will be added as dummy variables to the model. Related with internal political problems of Turkey, coup d'état attempt in 2016 is added as a dummy variable. For the foreign policy problems, problems with Russia and Israel are added as dummy variables.

The panel data analysis is made for 95 countries which the data for incoming number of tourists to Turkey is available for the years between 2007 and 2016. Therefore, in total 950 observations will be used in analysis with some missing data in certain explanatory variables. The list of countries can be seen in Appendix. The countries vary in terms of economic, political and geographical variables which are desired for the panel data analysis.

4.1. Number of Tourists

As stated before, number of tourists is the most commonly used dependent variable for determining the international tourism demand. Table 9 shows the total number of foreign tourist arrivals between 2007 and 2016. Data for tourist arrivals is retrieved from database of Turkish Statistical Institute and data is collected for 95 countries which is the number of available countries for tourist arrivals in the database. It is seen that in 2007, there are approximately 23.3 million tourists visited Turkey. Furthermore, there is a systematical increase in number of tourists until 2014. In 2014, number of tourists reached its peak level for the examined time period between 2007 and 2016 with 36.8 million tourists. Therefore, form 2007 and 2014, there is 57.82% increase in tourist arrivals. However, after 2014, tourist number decreases and in 2016, it becomes 25.3 million and there is 31.17% decrease compared to 2014 when the tourist arrivals are at its peak level.

Table 9: Tourist Arrivals to Turkey between 2007 and 2016

Year	Number of Tourists
2007	23340911
2008	26336677
2009	27077114

2010	28632204
2011	31456076
2012	31782832
2013	34910098
2014	36837900
2015	36244632
2016	25352213

According to UNWTO, in 2015, Turkey is the world's 6th most tourist incoming country in the world. However, with the significant decrease in 2016, even though Turkey is 7th in Europe, it fell from top 10 in worldwide rankings.

When share of countries and continents to total number of tourists is examined from Table 2 and Table 3, it is seen that highest share of tourists in terms of continents is Europe with more than 50% in 2015 and 6 of the 10 most tourist origin countries to Turkey are European countries except USA, Georgia, Iran and Iraq.

Table 10 shows the descriptive statistics for the number of tourists for the 95 countries between 2007 and 2016. For 950 observations with no missing observations, mean is 305159.5 and median is 76303.5. Minimum number of observed tourists is 155 which correspond to number of tourists from Paraguay in 2007 and maximum is 5580792 for number of tourists from Germany in 2015. All data for number of tourists for 95 countries can be seen in Appendix.

Table 10: Descriptive Statistics for the Number of Tourists

Descriptive Statistics (Number of Tourists)	
Observations	950
Missing Observations	0
Mean	305159.5
Median	76303.5
Minimum	155
Maximum	5580792
Standard Deviation	679403.18

CV	2.2263
Skewness	4.5021
Kurtosis	23.6816
5% percentile	2938.3
95% percentile	1392990.45

4.2. GDP Per Capita

First and key economic explanatory variable for the tourism demand should be related with income. As it is mentioned before, there are different alternative to measure income such as GDP and GNP. However, in this thesis, GDP per capita is used in order to determine income. GDP per capita is found dividing GDP to the midyear population. The reason for using GDP per capita is that since tourism is an individual action, GDP per capita is more suitable than GDP or GNP. Moreover, Saray and Karagöz (2010) and Karagöz and Selim (2014) makes panel data analysis for the gravity model of tourism to Turkey and Romania respectively and found out that GDP per capita is more suitable than GDP.

Another reason for using GDP per capita is related with panel data dynamics. Since weighted distance which depends on distance and GDP is used as an explanatory variable in the model, GDP per capita is used as an explanatory variable in order to avoid collinearity that can occur between GDP and weighted distance.

Data for GDP per capita is retrieved from World Bank database. Figure 1 shows the GDP per capita development of the top 10 tourist origin countries to Turkey in 2015 between 2007 and 2016. It is seen that, highest GDP per capita in 2016 belongs to USA which is 57638.2 $ and minimum belongs to Georgia 3865.79 $ in 2016. GDP per capita data for all 95 countries can be seen in Appendix.

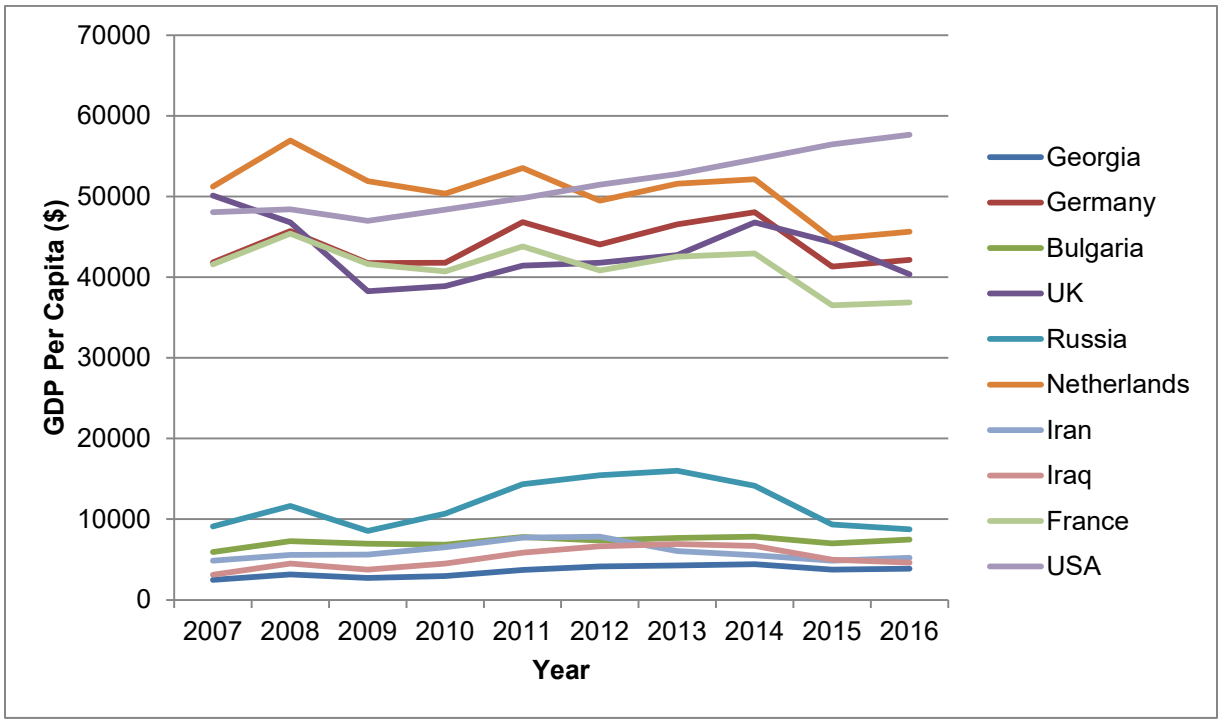

Figure 1: GDP Per Capita Development of the top 10 tourist incoming countries to Turkey between 2007 and 2016

Table 11 shows the descriptive statistics for the GDP per capita expressed in USD. First of all, there are 943 observations. Therefore, it can be seen that there are 7 missing observations. Those missing observations are GDP per capita of Venezuela in 2015 and 2016 and Libya between 2012 and 2016. Standard deviation is 22464.1471 $ which indicates that the GDP per capita of the selected countries differ significantly which is desired for the panel data analysis. Furthermore, minimum value for GDP per capita is 369.8357 $ which is the data for Afghanistan in 2007. Maximum values is 119225.38 $ which is the data for Luxembourg in 2014.

Table 11: Descriptive Statistics for the GDP per Capita in $

Descriptive Statistics (GDP Per Capita ($))	
Observations	943
Missing Observations	7
Mean	20320.9579
Median	10243.3283

Minimum	369.8357
Maximum	119225.38
Standard Deviation	22664.1471
CV	1.1153
Skewness	1.5828
Kurtosis	2.3824
5% percentile	1038.3245
95% percentile	62030.4235

4.3. Weighted Distance

In order to measure the effect of distance to the international tourism demand to Turkey, weighted distance variable is used which is based on GDP and the distance. The reason for using weighted distance variable instead of distance is that since the distance is constant between two countries over time period, distance will be omitted in the FE model. Therefore, in order to measure the effect of distance, weighted distance is used which is also used by Saray and Karagöz (2010) and Culiuc (2014) in the panel gravity model analysis of international tourism demand which fixed effects model is used. Moreover, this variable is the modified version of the weighted distance explained by Head and Mayer (2013) and it is called as the remoteness variable. The variable introduced by Head and Mayer (2013) includes distance and GDP of origin country. In the modified version, world GDP is also included. The formula for the weighted distance used in the analysis is as follows.

$$Weighted\ distance_{ijt} = \frac{Distance_{ij} * GDP_{it}}{GDP_t} \quad (1)$$

As it is seen from the formula above, weighted distance from country i to country j at time t is directly proportional with the actual distance and the GDP of country i at time t. Furthermore, it is inversely proportional with the sum of the GDPs of all countries in the world at specific year. Therefore, it can be concluded that weighted distance is the multiplication of actual distance between two countries and the share of tourist origin country's GDP in the world for the specified year.

Distance is measured using the great-circle distance approach. This method calculates the minimum distance between two points on the sphere. Since the number of tourists to each city in Turkey is available from each country, distance is calculated from the most populated city of the origin country to the most preferred Turkish city from that origin country. Most preferred destinations in Turkey are İstanbul and Antalya. For the border countries, Edirne and Artvin are also preferred. Only for the United Kingdom, Muğla is the most preferred destination. Another thing is the way of transport for the tourist to Turkey from each country. Even though most of the time, air travel is the preferred way of travel, for some countries which are Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Macedonia, Romania and Serbia, land transport is more preferred. Therefore, for these countries, distance using car is taken. Distance data is retrieved from distancecalculator.net. Figure 2 shows the distance for the top 10 tourist incoming countries to Turkey. It is seen that except USA, distance is less than 3000 km. In the Appendix, distance between origin cities and the corresponding destination cities in Turkey for each country can be found.

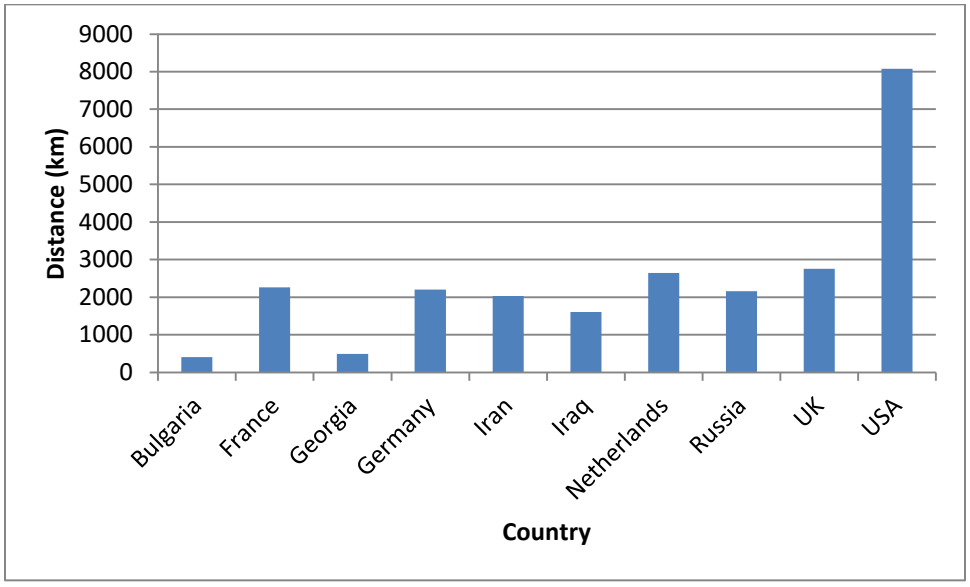

Figure 2: Distance for the top 10 tourist incoming countries to Turkey

Table 12 shows the descriptive statistics for the distance. Distance data has mean of 4387.5 km and median of 2720 km. It is seen that the minimum distance is 403 km which is the distance between Sofia, Bulgaria and Edirne, Turkey. Since Bulgarians prefer land transport more than air

transport, this is the distance taken by car. Maximum distance is 17058 which is the air distance between Auckland, New Zealand and İstanbul, Turkey.

Table 12: Descriptive Statistics for the Distance in km

Descriptive Statistics (Distance (km))	
Observations	950
Missing Observations	0
Mean	4387.5
Median	2720
Minimum	403
Maximum	17058
Standard Deviation	3870.6
CV	0.88219
Skewness	1.2495
Kurtosis	0.57153
5% percentile	569
95% percentile	12187

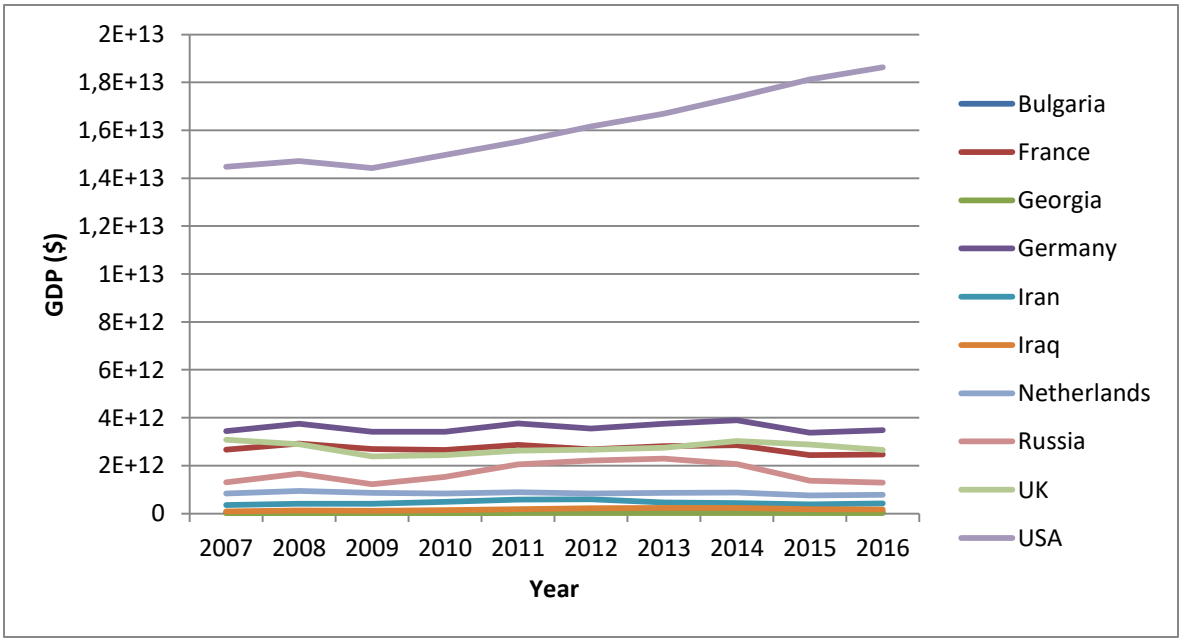

Figure 3: GDP Development of the top 10 tourist incoming countries to Turkey between 2007 and 2016

As it is previously described, other variable that is used to calculate weighted distance is the GDP. Figure 3 shows the GDP between 2007 and 2016 for the top 10 tourist incoming countries to Turkey. From Figure 3, it is seen that highest GDP belongs to USA among the top 10 countries with more than 18.6 trillion $ in 2016.

Table 13 shows the descriptive statistics for the GDP. Similar to GDP per capita, there are 7 missing values for Libya and Venezuela. It is seen that 710 billion $ and median is 176 billion $. Moreover, minimum value for GDP belongs to Tajikistan in 2007 and maximum value belongs to USA in 2016.

Table 13: Descriptive Statistics for GDP in $

Descriptive Statistics (GDP ($))	
Observations	943
Missing Observations	7
Mean	7.10289E+11
Median	1.76193E+11
Minimum	3719497371
Maximum	1.86245E+13
Standard Deviation	1.97359E+12
CV	2.77857161
Skewness	6.06121685
Kurtosis	42.24559886
5% percentile	10635658418
95% percentile	2.84115E+12

Based on the formula described above, weighted distance is calculated and the descriptive statistics for the weighted distance can be seen in Table 14. It is seen that mean is 62.049 and median is 7.1452. Moreover, minimum value is 0.050812 which corresponds to the weighted distance of Moldova in 2007 and maximum value is 2021.5 which is the weighted distance of USA in 2007. Since GDP data is missing for 7 observations, 7 observations are also missing for the weighted distance.

Table 14: Descriptive Statistics for Weighted Distance

Descriptive Statistics (Weighted Distance)	
Observations	943
Missing Observations	7
Mean	62.049
Median	7.1452
Minimum	0.050812
Maximum	2021.5
Standard Deviation	219.29
CV	3.5341
Skewness	6.6017
Kurtosis	48.351
5% percentile	0.13969
95% percentile	246.59

4.4. Population

Another important explanatory variable in the panel gravity model for tourism demand is the population of the tourist origin countries. As it is stated by Lim (1997), in 60 out of 100 articles about tourism demand, qualitative factors are used in the models and population is one of the most commonly used qualitative variables.

Population data is retrieved from World Bank database. Population determined by the World Bank includes number of residents in the country regardless from their legal status or citizenship. Moreover, numbers in the dataset are the midyear estimates for the population.

Figure 4 shows the population for the top 10 tourist incoming countries to Turkey in 2016. From the figure, it is seen that among these top 10 countries, USA has the highest population with more than 323 million people and Georgia has the lowest population with more than 3 million people. It is also seen that among these top 10 countries, countries which have border with Turkey except Iran such as Georgia, Bulgaria and Iran has lower population compared to the other countries

which are Germany, Russia, UK and USA except Netherlands. In the Appendix, population for all 95 countries between 2007 and 2016 can be found.

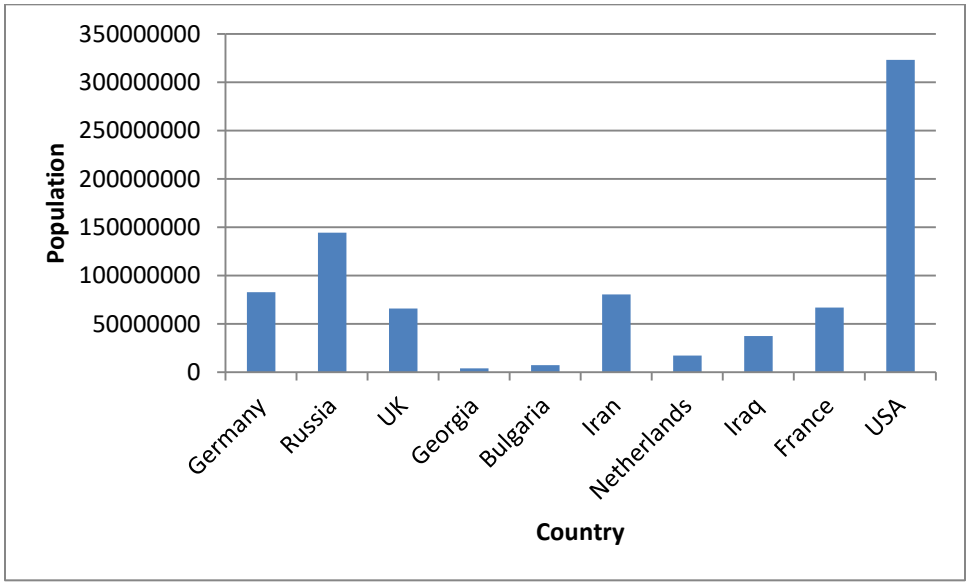

Figure 4: Population for top 10 tourist incoming countries to Turkey in 2016

Table 15 shows the descriptive statistics for population for 95 countries in 10 years without any missing observations. It is seen that the mean is slightly more than 63 million and median is slightly more than 11 million. Standard deviation is 190 million which can be considered as high. Moreover, minimum population is 311566 which belong to Iceland in 2007 and the highest population is 1.38 billion which belongs to China in 2016.

Table 15: Descriptive Statistics for Population

Descriptive Statistics (Population)	
Observations	950
Missing Observations	0
Mean	63001793
Median	11029785
Minimum	311566
Maximum	1.38E+09
Standard Deviation	1.90E+08
CV	3.0155742

Skewness	5.8986977
Kurtosis	35.568029
5% percentile	1986467.3
95% percentile	1.96E+08

4.5. Relative Prices

As Lim (1997) states, relative prices is the second most commonly used explanatory variable after income in panel data analysis of tourism which is used in 60 out of 100 investigated articles. Similar to Lim (1997), Li et al. (2005) reviewed 84 studies which are made after 1990 about the tourism demand. They concluded that, even though there are different definitions for income and relative prices, these two variables are the most common variables used in modeling tourism demand. Relative price basically means measuring the certain price of goods and services in terms of one another. Therefore, it is the ratio of prices. In tourism demand models, mainly two types of relative prices are used.

First of all, Dwyer et al. (2001) introduced the variable "Price Competitive Index" for models of international tourism demand. PCI depends on PPP and the exchange rates between origin and destination countries. This variable is also used by Brakke (2004) for determining the tourism demand of USA. This variable is adjusted in a way such that the tourist destination country has PCI value of 100. For the tourist origin countries, if PCI is smaller than 100, origin country have more price competitiveness than the destination country which means that the goods and services are cheaper in the origin country. Formula for PCI for country i at time t is as follows:

$$PCI_{it} = \frac{PPP_{it}}{Exchange\ Rate_{it}} * 100 \quad (2)$$

Another and more commonly used variable for relative prices is based on CPI rather than PPP. Lim (1997) states that by using this variable, effective price of goods and services, changes in inflation and exchange rate are combined in a single variable. The formula for the relative price in destination country i at time t is as follows where CPI_{it} is the consumer price index of destination country at time t, CPI_{jt} is the consumer price index of origin country and ER_{ijt} is the exchange rate between origin and destination country. Increase in relative prices indicates that purchases in destination country are getting more expensive for the origin country.

$$RP_{it} = \frac{CPI_{it}}{CPI_{jt}} * ER_{ijt} \quad (3)$$

Due to unavailability of finding exchange rates between two countries, relative prices can also be formulated as follows which is used by Aktürk and Küçüközmen (2006) and Song et al. (2010). In this formula, ER_{it} is the exchange rate between currency of origin country and USD and ER_{jt} is the exchange rate between currency of destination country and USD.

$$RP_{it} = \frac{CPI_{it}}{CPI_{jt}} * \frac{ER_{it}}{ER_{jt}} \quad (4)$$

Dupeyras and MacCallum (2013) analyses the interpretation and challenges for PPP and CPI for measuring competitiveness in tourism. It is stated that with PPP, comparison between different countries can be made. Brakke (2004) also states that CPI is meaningless for the tourism demand analysis due to different base years, effects of inflation. However, the main challenge with PPP is that it requires large number of goods and services and for tourism PPP, specific type good and services should be selected for realistic measures.

Dupeyras and MacCallum (2013) states that for more effective tourism policy, inflation assessment and real prices are important for CPI should be used in order to measure these effects. Therefore, it is an important determinant for tourism. Main challenge with CPI is that it is calculated as weighted average of price changes in goods and services. Therefore, for all countries, same goods and services must be used in order to determine a general CPI for all countries.

When articles about tourism demand are investigated, it is seen that in most of the articles, as it is also stated by Lim (1997), relative price formula based on CPI and exchange rate is used. Even though in some works such as Gan (2014), relative prices which is the ratio of CPIs in destination and origin countries and exchange rates are taken as different variables rather than combining them as in equation (3), exchange rate based relative price formula is the common approach. Therefore, for the panel data analysis, CPI based relative price formula is used which is in equation 4. Data for CPI and exchange rates are retrieved from World Bank Database.

Figure 5 shows CPI of Turkey between 2007 and 2016. In the World Bank data, CPI for 2010 is taken as 100 for all countries. It is seen that minimum CPI for Turkey is 78.49 in 2007 and maximum CPI is 157.42 in 2016.

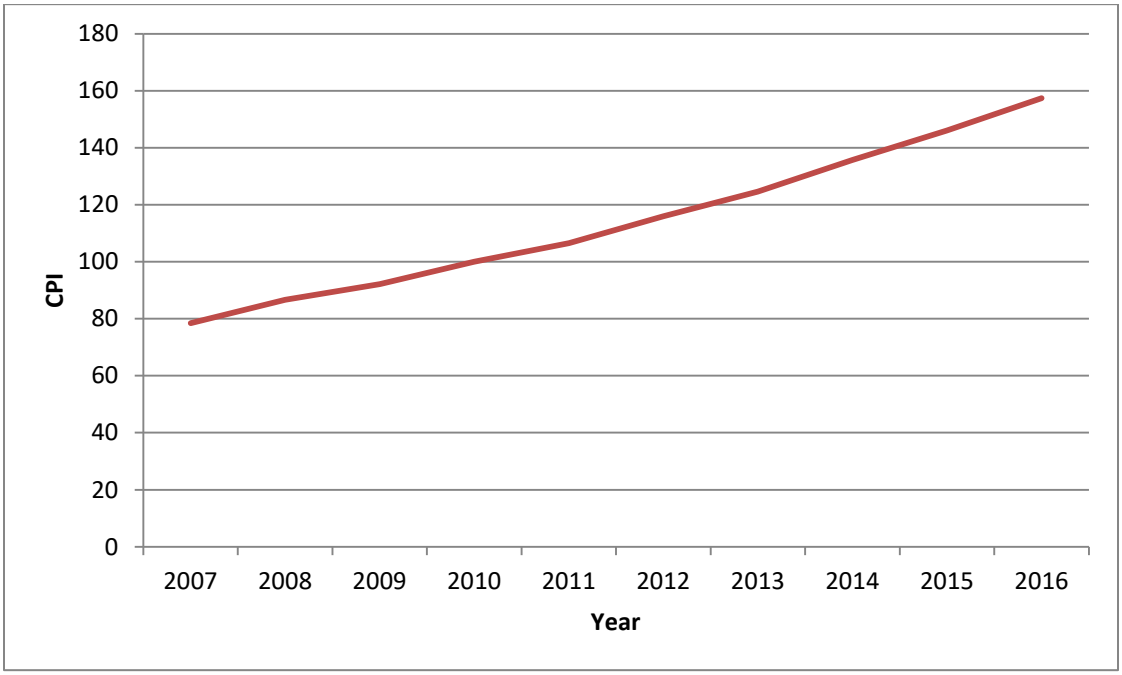

Figure 5: CPI (2010=100) for Turkey between 2007 and 2016

Table 16 shows the descriptive statistics for the CPI. For 95 countries, 947 observations are made with 3 missing data for Libya between 2014 and 2016. From Table 16, it is seen that mean is 112.92 and median is 104.87. Minimum CPI is 52.86 which is the value for Venezuela in 2007. Maximum CPI is 2740.3 which is also for Venezuela in 2016. Standard deviation of 93.461 indicates that selected countries vary significantly in CPI. CPI data for the countries can be found in Appendix.

Table 16: Descriptive Statistics for CPI (2010 = 100)

Descriptive Statistics (Consumer Price Index (2010 = 100))	
Observations	947
Missing Observations	3
Mean	112.92
Median	104.87
Minimum	52.86

Maximum	2740.3
Standard Deviation	93.461
CV	0.82768
Skewness	24.064
Kurtosis	661.05
5% percentile	83.8
95% percentile	146.43

As for the exchange rates, Figure 6 shows the exchange rate between TRY and USD between 2007 and 2016. From the figure, it is seen that in the observed years, TRY/USD rate has minimum value in 2007 which is 1.30. In 2016, 1 USD becomes 3.02 TRY. Therefore, in 10 years, TRY lost 132% in value to USD.

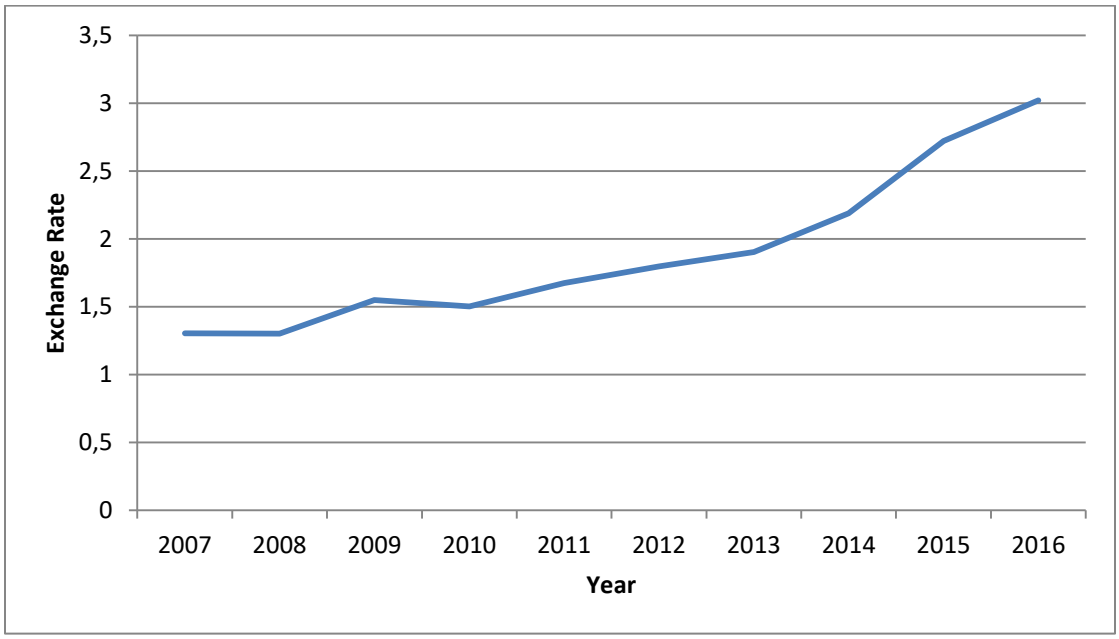

Figure 6: TRY/USD rate between 2007 and 2016

Table 17 shows the descriptive statistics for exchange rate between destination country and TRY. As it is mentioned before, exchange rate between currency of origin country and TRY is not available. Therefore, exchange rate between origin country and TRY is calculated by using the exchange rate of currency of origin countries and TRY's against USD as in equation (4). Therefore, final exchange rate between origin country and Turkey is defined as the ratio of the

available exchange rates against USD. As it is seen in Table 17, there are 950 observations with no missing data. Mean is 315.1 and median is 2.5638. Minimum exchange rate is 0.10005 which is the rate between TRY and Kuwait Dinar in 2016. Maximum exchange rate is 11853 which is the rate between TRY and Iranian Rial in 2014. Exchange rate for all 95 countries can be found in Appendix.

Table 17: Descriptive Statistics for Exchange Rate against TRY

Descriptive Statistics (Exchange Rate against TRY)	
Observations	950
Missing Observations	0
Mean	315.1
Median	2.5638
Minimum	0.10005
Maximum	11853
Standard Deviation	1300.7
CV	4.128
Skewness	5.5139
Kurtosis	32.276
5% percentile	0.29934
95% percentile	1105.7

Based on equation (4), Table 18 shows the descriptive statistics for the relative prices. It is seen that there are 3 missing data which is due to missing data for Libya in CPI. Mean is 300.99 and median 2.5061. In addition, minimum relative price is 0.12916 which is for Kuwait in 2016 and Kuwait also has the minimum value for exchange rate. Maximum relative price is 9482 which is for Turkmenistan in 2010. Relative price data for the observed countries can be found in Appendix.

Table 18: Descriptive Statistics for Relative Prices

Descriptive Statistics (Relative Prices)	
Observations	947
Missing Observations	3

Mean	300.99
Median	2.5061
Minimum	0.12916
Maximum	9482
Standard Deviation	1190.5
CV	3.9551
Skewness	5.1675
Kurtosis	27.463
5% percentile	0.32767
95% percentile	1131.2

4.6. Democracy Index

In this chapter, all the previously described explanatory variables are commonly used variables in international tourism demand models. However, besides these quantitative variables, it is important to include political stability of the origin and destination countries in the model. Based on literature review, it is seen that political stability is not commonly used variable in tourism demand models. In the academic literature, there are few articles that investigate the relationship between political stability and tourism. Altınay and Bowen (2006) investigate the effects of politics of tourism of Cyprus. Political instability and the effects of war cause significant decrease in number of tourists. Similarly, Causevic and Lynch (2013), investigates the effects of war and political instability on tourism for the case of Bosnia and Herzegovina.

In order to determine political stability of a country in the panel data analysis, there is no specific approach. It can be added as a dummy variable as if the country is politically free or not but this will be subjective approach. Similarly, “dictator dummy” can be used if the leader of the country is dictator or not. Again, this approach is subjective. However, as it is suggested by Brakke (2004) and Saha et al. (2017), variable that takes some sort of number is the best way to measure political stability of a country.

In their analyses, both Brakke (2004) and Saha et al. (2017) used Freedom House’s data to determine political instability of a country. Freedom House is a US government funded NGO and

it conducts research about civil and political liberties in the world. Freedom House publishes annual reports and makes the rankings for the countries between 1 and 7 which 1 is the most free and 7 is the least free.

In this thesis, instead of Freedom House's data, Democracy Index which is introduced by Economist Intelligence Unit (EIU) in 2006. It is stated by the EIU that Freedom House's approach of covering civil and political liberties are not sufficient enough to determine the democracy. Therefore, Democracy Index is based on five categories which are as follows:

- Electoral process and pluralism
- Civil Liberties
- Functioning of government
- Political Participation
- Political Culture

The score is based on 1 to 10 with the following result for the democracy of the examined country:

Table 19: Democracy Index Score and corresponding Type of Democracy

Score	Type of Democracy
Score>8	Full democracy
6<Score<=8	Flawed Democracy
4<Score<=6	Hybrid Regime
Score<=4	Authoritarian Regime

Democracy Index data is retrieved from The Economist. Data is available between 2007 and 2016 annually except for 2009. Therefore, in order to prevent missing observations, for 2009, average of the indexes of 2008 and 2010 is taken. Table 20 shows the democracy index of Turkey between 2007 and 2016. For the missing category values, data is not available. When Table 20 is examined it is seen that Turkey has the highest democracy index in 2012 with 5.76 which corresponds to hybrid regime. Moreover, between 2007 and 2016, there is %11.57 decrease in democracy index.

Table 20: Democracy Index of Turkey between 2007 and 2016

Year	Overall Score	Electoral process and pluralism	Civil Liberties	Functioning of Government	Political Participation	Political Culture
2007	5.7	7.92	6.79	4.44	3.75	5.59
2008	5.69	7.92	5	6.07	4.44	5
2009	5.71					
2010	5.73	7.92	4.71	7.14	3.89	5
2011	5.73	7.92	4.71	7.14	3.89	5
2012	5.76	7.92	4.12	6.79	5	5
2013	5.63					
2014	5.12	6.67	3.53	5.36	4.44	5.63
2015	5.12	6.67	2.94	5.36	5	5.63
2016	5.04	5.83	2.65	6.07	5	5.63

Table 21 shows the democracy index of top 10 tourist origin countries to Turkey between 2007 and 2016. It is seen that among these 10 countries, highest democracy index belongs to Netherlands with 9.66 in 2007 and lowest democracy index belongs to Iran with 1.94 in 2010. Moreover, it is also seen that in 2007, 4 countries which are Russia, Georgia, Iran and Iraq have lower democracy index then Turkey. However, in 2016, this number is reduced to 3 with Georgia having higher democracy index than Turkey.

Table 21: Democracy Index of top 10 tourist origin countries between 2007 and 2016

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Germany	8.82	8.82	8.6	8.38	8.34	8.34	8.31	8.64	8.64	8.63
Russia	5.02	4.48	4.37	4.26	3.92	3.74	3.59	3.39	3.31	3.24
UK	8.08	8.15	8.155	8.16	8.16	8.21	8.31	8.31	8.31	8.36
Georgia	4.9	4.62	4.605	4.59	4.74	5.53	5.95	5.82	5.88	5.93
Bulgaria	7.1	7.02	6.93	6.84	6.78	6.72	6.83	6.3	7.14	7.01
Iran	2.93	2.83	2.385	1.94	1.98	1.98	1.98	1.98	2.16	2.34
Netherlands	9.66	9.53	9.26	8.99	8.99	8.99	8.84	8.92	8.92	8.8

Iraq	4.01	4	4	4	4.03	4.1	4.1	4.23	4.08	4.08
France	8.07	8.07	7.92	7.77	7.77	7.88	7.92	8.04	7.92	7.92
USA	8.22	8.22	8.2	8.18	8.11	8.11	8.11	8.11	8.05	7.98

Finally, there are 950 observations for democracy index for 95 countries with no missing data. From Table 22, it is seen that, mean is 6.1093 and median is 6.54. Minimum democracy index is 1.71 which belongs to Saudi Arabia in 2012 and highest democracy index is 9.93 which belong to Norway and it is constant between 2012 and 2016. Standard deviation of 2.24 indicates that observed countries vary significantly between democracy indexes which can be considered sufficient for the analysis. Democracy index for all 95 countries can be found in Appendix.

Table 22: Descriptive Statistics for Democracy Index

Descriptive Statistics (Democracy Index)	
Observations	950
Missing Observations	0
Mean	6.1093
Median	6.54
Minimum	1.71
Maximum	9.93
Standard Deviation	2.24
CV	0.36605
Skewness	-0.33636
Kurtosis	-1.0251
5% percentile	2.37
95% percentile	9.2545

4.7. Terror Index

Similar to political instability, effects of terrorism on both origin and destination countries also has significant impact on foreign tourist arrivals. Even though, there is no general definition for terrorism, United Nations General Assembly defines terrorism as follows:

"Criminal acts intended or calculated to provoke a state of terror in the general public, a group of persons or particular persons for political purposes are in any circumstance unjustifiable, whatever the considerations of a political, philosophical, ideological, racial, ethnic, religious or any other nature that may be invoked to justify them."

One of the first researches about effects of terrorism on tourism is conducted by Sönmez (1998). From this research, it is concluded that terrorism on tourism are related concepts and examples are given where terrorism affects tourism of countries including Turkey. However, these early researches are mainly not quantitative. Neumayer (2004) uses the FE model and GMM to analyze the impact of terror together with other economic variables and concludes that terrorist attacks have negative impact on tourism.

Turkey is significantly affected by terrorist related incidents especially after 1980s. In 1990s, terrorist attacks are also affected tourism. For instance, Kurdistan Workers Party (PKK) bombed hotels and kidnapped foreign tourists. PKK conflict is mainly in southeast Anatolia. Therefore, some countries such as USA and Germany discourage their citizens to visit the southeast of Turkey. Moreover, after the start of Syrian Civil War, terror attacks of ISIS and Kurdistan Freedom Hawks (TAK) also affected Turkey significantly. Turkish government claims that TAK is part of PKK but TAK denies it.

Data for terror attacks are retrieved from GTD for which number of terror attacks with dates, fatalities and injuries are available for observed countries between 1970 and 2016. Figure 7 shows the number of terror attacks in Turkey between 2007 and 2016. In 2007, there are 29 terror attacks which majority of them is perpetrated by PKK and TAK. Attack with most casualties occurred in Ankara. 5 people died and 50 people wounded due to this attack which is perpetrated by TAK. In 2009, number of terror attacks reached its minimum number, which is 13, between 2007 and 2016. In 2012, number of attacks significantly increases in 2012 with 189 attacks. In 2015 and 2016, Turkey had faced with most terror attacks between 2007 and 2016. In 2015, there were total of 421 attacks. Moreover, on October 2015 in Ankara, Turkey experienced the deadliest terror attack in its history. 105 people died and 245 people injured and the attack is perpetrated by ISIS. In 2016, number of terror attacks reached 540. On June 2016, ISIS attacked Istanbul Atatürk Airport where 48 people died and 235 people injured. Figure 8 shows the travel warning of US government for Turkey which was published in August 29, 2016. It is seen that, southeast of Turkey, especially cities which have border with Syria and Iraq, had considered such

that there is critical threat of terrorism. Moreover, Mediterranean cost and big cities such as İstanbul and Ankara, which are also main tourist destinations, are marked as substantial threat to terrorism.

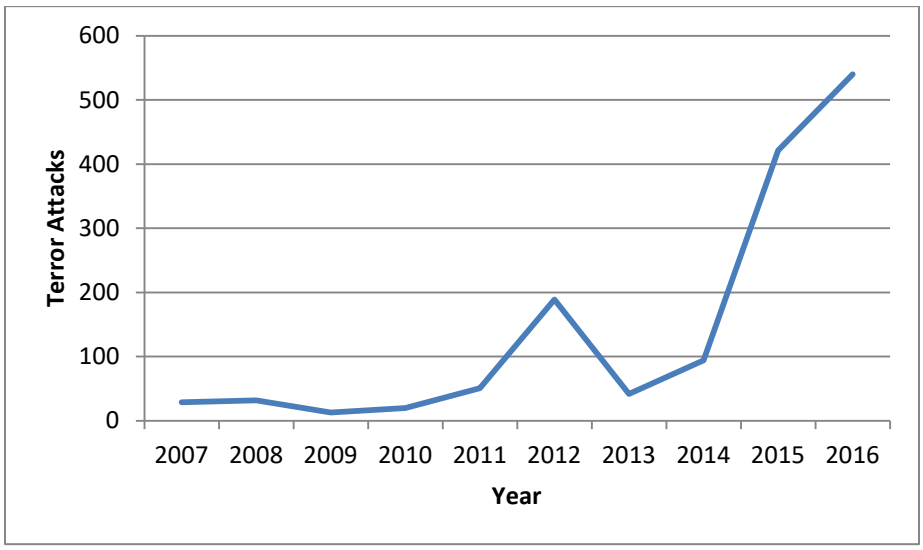

Figure 7: Number of terror attacks in Turkey between 2007 and 2016

Figure 8: Travel Advice to Turkey by USA in August 2016

In order to do a similar approach as in the case of democracy, terror index is formulated. Even though, there are indexation methods for terrorism such as GTI, it only covers the incidents after 2012. Therefore, this index is not sufficient for the analysis since panel data starts from 2007. Terrorism index is formulated in a way such that the range is between 1 and 10 for least and most affected countries from terrorism respectively. Formula for terror index is as follows. In the formula, terror index of country i at time t is 10 times the ratio of the terror attacks in country i

and country j which have the maximum number of terror attacks at time t. Except for 2012, maximum number of terror attacks occurred in Iraq. In 2012, maximum number of attacks occurred in Pakistan.

$$Terror\ Index_{it} = \frac{Terror\ Attacks_{it}}{\max(Terror\ Attacks_{jt})} * 10 \quad (5)$$

Table 23 shows the terror index for Turkey and top 10 tourist origin countries between 2007 and 2016. It is seen that highest index belongs to Iraq since it has the maximum number of attacks between 2007 and 2016 except for 2012. Moreover, Turkey has the highest index in 2016 which is 1.6091. In 2007, Turkey has bigger index than 8 countries except for Russia and Iraq. In 2016, Turkey has lower index only than Iraq.

Table 23: Terror Index for Turkey and top 10 tourist origin countries between 2007 and 2016

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Germany	0.0287	0.0271	0.0352	0.0085	0.0612	0.0242	0.0000	0.0331	0.2332	0.1222
Russia	0.4871	1.5385	1.3369	2.1289	1.4373	0.9140	0.5054	0.1223	0.0765	0.1609
UK	0.1910	0.3529	0.1935	0.4835	0.3593	0.3269	0.4809	0.2624	0.4155	0.3099
Georgia	0.0287	0.0271	0.0352	0.0085	0.0612	0.0242	0.0000	0.0331	0.2332	0.1222
Bulgaria	0.0000	0.0181	0.0000	0.0000	0.0153	0.0121	0.0105	0.0025	0.0073	0.0030
Iran	0.0860	0.0724	0.1319	0.1187	0.0994	0.0303	0.0386	0.0229	0.0328	0.0298
Netherlands	0.0000	0.0090	0.0088	0.0085	0.0153	0.0000	0.0000	0.0025	0.0109	0.0179
Iraq	10.0000	10.0000	10.0000	10.0000	10.0000	8.6985	10.0000	10.0000	10.0000	10.0000
France	0.1528	0.1176	0.0792	0.0254	0.0612	0.3935	0.0421	0.0357	0.1312	0.0775
USA	0.0860	0.1629	0.0880	0.1442	0.0765	0.1150	0.0702	0.0662	0.1421	0.1818
Turkey	0.2770	0.0288	0.0117	0.1696	0.3899	1.1441	0.0327	0.2394	1.5343	1.6091

Table 24 shows descriptive statistics for terror index. It is seen that mean in 0.39653 and median is 0.0087951. Moreover, minimum is 0 for the countries where there is no terror attack and maximum is 10 where the most terror attacks occur. In Appendix, number of terror attacks and terror index for 95 observed countries can be found.

Table 24: Descriptive Statistics for Terror Index

Descriptive Statistics (Terror Index)	
Observations	950
Missing Observations	0
Mean	0.39653
Median	0.0087951
Minimum	0
Maximum	10
Standard Deviation	1.3859
CV	3.495
Skewness	5.1537
Kurtosis	28.838
5% percentile	0
95% percentile	2.286

4.8. 2016 Turkish coup d'état attempt

Besides the political instability and effects of terrorism in the destination country, internal political problems also have significant impact on foreign tourist arrivals. Even though, coup can be considered as part of political instability, better approach is to include the coup attempt in 2016 as a dummy variable. This dummy variable is included for all the observed countries for 2016.

Fletcher and Morakabati (2008) investigate tourism activity in Fiji which had faced many coups after 1980s. First of all, it is seen that after the first coup in 1987, hotel occupancy was only 10% of what is expected and tourism revenues fell 36.6M Fiji dollar. After that, in 2000, another coup occurred and major tourist sources of Fiji such as Australia, New Zealand and USA advised their citizens not to go to Fiji. After the coup in 2000, in that year, tourism revenues fell 35% and tourist arrivals fell 28%. Therefore, from the example of Fiji, it can be concluded that coups have significant effect in international tourist arrivals.

On July 15th 2016, coup attempt in Turkey occurred mainly in İstanbul, Ankara and Marmaris. Even though the coup attempt is not successful, there were many people killed and injured. Moreover, after the coup, state of emergency is declared by the Turkish government. Therefore, it is obvious that incoming tourists were affected from the situation. Besides that, coup attempt was in summer when the highest number of tourists comes to Turkey. After the failed coup, many countries including USA and United Kingdom issued travel advice for their citizens who wanted to go to Turkey.

4.9. 2010 Turkey-Israel Gaza Crisis

Political problems with other countries may also have an effect on number of tourist from the country which the tourist destination country has the problem with. As in the case of Turkey, one of the key political problems was with the Israel during the examined period which is between 2007 and 2016. Figure 9 shows the number of tourists from Israel to Turkey between 2007 and 2016. It is seen that in 2008, number of tourists reached the highest number with 558183 tourists. However, after 2008, there is a sharp decrease in number of tourists. In 2011, it reached the minimum level with only 79140 tourists. Even though, there is increase after 2011, it still cannot reach the level in 2008 as of 2016.

Main reason for the sharp decrease in number of tourists after 2008 is due to Gaza Flotilla Raid incident which happened in 31st May 2010. Gaza Flotilla Raid is a military operation by Israel in Mediterranean Sea against the ships which were carrying aid to Gaza Strip, which is blocked by Israel since 2007. The ships and aid is organized by İHH, a conservative Turkish NGO. Israeli soldiers attacked the ships and this resulted in death of 9 Turkish activists.

After the incident, Turkey cut diplomatic ties with Israel and recalled its ambassador. In October 2010, Israeli Tourism Minister encouraged Israeli citizens to boycott Turkey as a holiday destination. Moreover, flights between Turkey and Israel are reduced to half after the incident. Therefore, the significant decrease in number of tourists can be explained by the affects of Gaza Flotilla Raid incident.

As Polat (2016) states, even though there are some political problems between Turkey and Israel before Gaza Flotilla Raid incident such as Davos incident in 2009, Gaza incident is a turning

point in Turkey-Israel relations including the tourism relations. Therefore, for the dummy variable, starting year is 2010. On March 22nd 2013, Israeli prime minister officially apologized from the Turkish government which is accepted. Even though official agreement was made in 2016, relations started to become normalized in 2013. It was announced by Israeli officials that number of Turkish flights to or from Israel are higher than any other country in 2014. Because of that, the ending period of dummy variable is chosen as 2013.

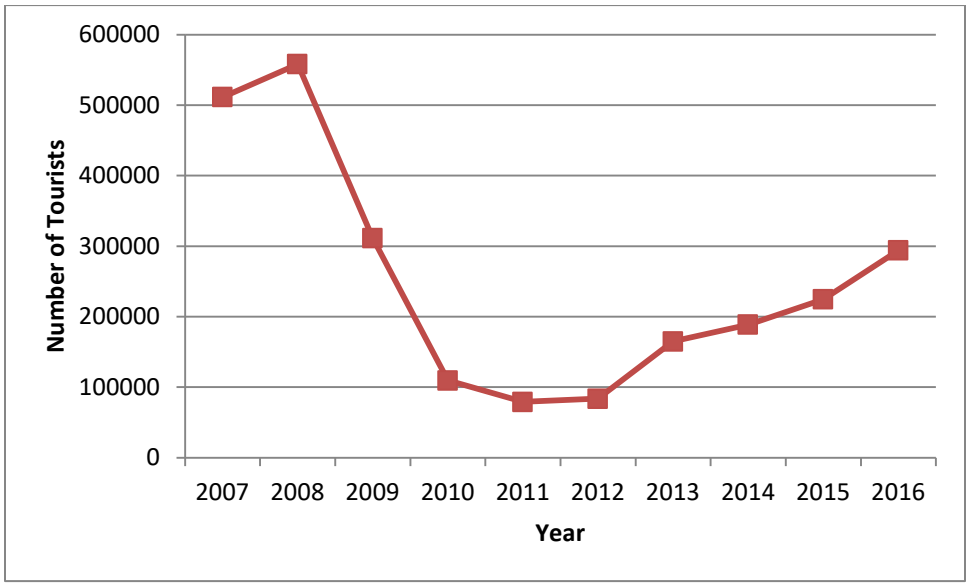

Figure 9: Number of tourists from Israel between 2007 and 2016

4.10. 2015 Turkey-Russia Plane Crisis

Another political problem which had an effect of tourism of Turkey is occurred between Turkey and Russia on 2015. It can be said this problem is more important than problem with Russia because as it is seen in Table 3, Russia has the second highest number of tourists to Turkey in 2015.

Figure 10 shows number of tourists from Russia to Turkey between 2007 and 2016. It is seen that highest number of tourists is in 2014 with more than 4.479 million people. However, in 2016, there is 80.66% decrease in number of tourists compared to 2014. Moreover, number of Russian tourists reached minimum level between 2007 and 2016.

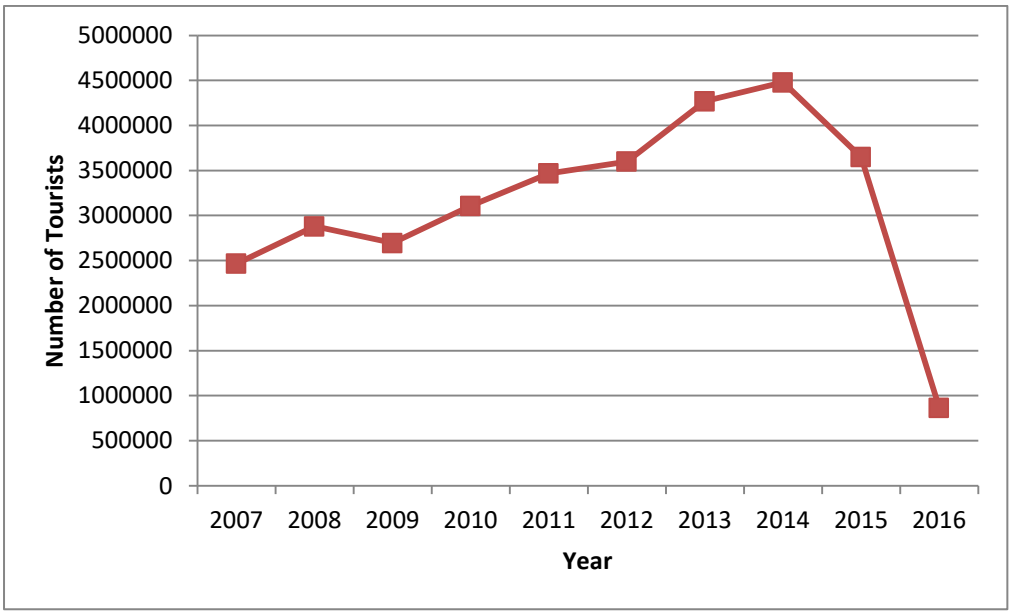

Figure 10: Number of tourists from Russia between 2007 and 2016

Political crisis between Russia and Turkey occurred due to Turkish shooting down of a Russian jet near Turkey-Syria border on 24th November 2015. Turkish authorities claim that the jet was inside Turkish border and it was warned multiple times but Russian authorities denied it. After the incident, Russia imposed some sanctions on Turkey. Related with tourism, Russian tour operators are forced not to sell tour packages to Turkey. Moreover, Russia banned charted flights to Turkey. Therefore, the sharp decrease in the number of Russian tourist can be explained by the plane crisis.

In June 2016, Turkish president had apologized from Russia about the incident. In August 2016, Russia lifted the ban on charter flights and tour operations. Since the incident occurred at the end of 2015 and ended in late summer in August 2016, dummy variable for the plane crisis is only for the year of 2016. Because, most of Russian tourists travel to Turkey in summer and the ban is lifted at the end of the summer. Therefore, number of Russian tourists coming to Turkey is affected from the plane crisis.

5. Methodology

For the analysis of tourism demand of Turkey, gravity model for panel data is used. Panel data is made for 95 countries for 10 years which is between 2007 and 2016. There are 7 missing data which 5 of them is for Libya between 2012 and 2016 and 2 of them is for Venezuela for 2015 and 2016. Therefore, with the total of 943 observations, this model is unbalanced panel data.

Gravity equation is first introduced by Isaac Newton in the book Principia which first published in 1687. In Newton's law of gravity, force between two masses is directly proportional with the masses of the objects and inversely proportional with the square of distance between the objects. Newton's formula is as follows where G is the gravitational constant, m is the mass and d is the distance.

$$F_{ij} = G * \frac{m_i * m_j}{d_{ij}^2} \tag{6}$$

As it is previously mentioned in the "Literature Review" chapter, Newton's law of gravity can also be used in order to determine flows in international trade. Moreover, since tourism is also type of international trade as suggested by Keum (2008) and Morley et al. (2014), gravity model can also be used to determine tourist flows. In the gravity model for international trade, force is replaced with the trade flow, masses are replaced with the economic size, mainly GDP, and distance stays the same without the square. Basic gravity model for international trade (tourism) is as follows where F is the tourist flows, B is constant, η is the error term with expectation equal to 1 and α, γ and δ are parameters to be estimated.

$$F_{ij} = B * \frac{(GDP_i)^{\alpha} * (GDP_j)^{\gamma}}{(Dist_{ij})^{\delta}} * \eta_{ij} \tag{7}$$

For econometric estimation techniques, natural logarithm of the both sides of the equation above is taken which results in following equation. As it is seen from the equation, it is expected or coefficients of GDPs to be positive and distance to be negative. In addition, β=ln(B) and expectation of ε_{ij} equals to 0 where ε_{ij} is the normal error term.

$$\ln(F_{ij}) = \beta + \alpha * \ln(GDP_i) + \gamma * \ln(GDP_j) + \delta * \ln(Dist_{ij}) + \varepsilon_{ij} \tag{8}$$

As it is seen in the "Data" chapter, there are 9 explanatory variables and the dependent variable is number of tourists. Therefore, the final equation has the following form with inclusion of time.

$$\begin{aligned}\ln(TOUR_{it}) = \beta_0 + \beta_1 * \ln(GDPPC_{it}) + \beta_2 * \ln(WDIST_{iTt}) + \beta_3 * \ln(POP_{it}) + \\ \beta_4 * \ln(RP_{it}) + \beta_5 * \text{DEMDIFF}_{\text{iTt}} + \beta_6 * \text{TERRDIFF}_{\text{iTt}} + \beta_7 * \text{COUP} + \\ \beta_8 * \text{ISR} + \beta_9 * \text{RUS} + \varepsilon_{ij}\end{aligned} \tag{9}$$

where;

$$t = 2007,2008, \dots 2016 \tag{10}$$

$$i = 1,2, \dots ,95 \tag{11}$$

The definition of variables is as follows where i denotes the tourist origin country, T denotes Turkey and t denotes time.

- **TOUR:** Number of tourists arrivals to Turkey from origin country
- **GDPPC:** GDP per capita of origin country
- **WDIST**: Weighted distance of origin country to Turkey
- **POP:** Population of origin country
- **RP:** Relative price of origin country
- **DEMDIFF:** Democracy index difference between origin country and Turkey
- **TERRDIFF:** Terror index difference between Turkey and origin country
- **COUP:** Dummy variable for 2016 Turkey coup d'état attempt
- **ISR:** Dummy variable for Gaza crisis between Turkey and Israel
- **RUS:** Dummy variable for plane crisis between Russia and Turkey

Even though Brakke (2004) uses democracy index only for the destination country and Llorca-Vivero (2008) uses number of terror attacks only in destination country, better approach is to use difference of democracy and terror indexes as it is suggested by Santana-Gallego et al (2016). Formulas for DEMDIFF and TERRDIFF are as follows where DI denotes democracy index, TI denotes terror index, T denotes Turkey, i demotes origin country and t denotes time. Since DEMDIFF and TERRDIFF contain negative variables, natural logarithm of them is not taken.

$$DEMDIFF_{iTt} = DI_{it} - DI_{Tt} \quad (12)$$

$$TERRDIFF = TI_{Tt} - TI_{it} \quad (13)$$

For the panel data gravity models, commonly used models are Pooled OLS, FE and RE each with certain advantages and disadvantages. First of all, pooled OLS is basically simple OLS estimation with disregarding the panel data structure. For the panel data, general model is defined by Greene (2011) is as follows where heterogeneity term is z and it contains constant and group or individual specific variables.

$$y_{it} = x_{it}' * \beta + z_{it}' * \alpha + \varepsilon_{it} \quad (14)$$

There also basic assumptions about the unobserved effects for the panel data which are as follows and the assumptions are named strict exogeneity and mean independence respectively.

$$E[\varepsilon_{it}|x_{i1}, x_{i2}, \dots] = 0 \quad (15)$$

$$E[c_{it}|x_{i1}, x_{i2}, \dots] = \alpha \quad (16)$$

As Greene (2011) states, if z contains only constant term, then pooled OLS is consistent and efficient estimator of α and β. However, if z is unobserved and correlated with x, then β becomes consistent and unbiased. Therefore, FE model is written as follows where c contains all observable effects.

$$y_{it} = x_{it}' * \beta + c_i + \varepsilon_{it} \quad (17)$$

Finally, if the z is assumed to be uncorrelated with the included variables, RE model is used which is formulated as follows where u is group specific random element.

$$y_{it} = x_{it}' * \beta + \alpha + u_i + \varepsilon_{it} \quad (18)$$

As it is previously described in the "Literature Review" chapter, Davidova (2015) examines the advantages and disadvantages of pooled OLS, FE and RE. Moreover, as Head and Mayer (2013) states, for gravity model of trade, FE model is the common approach. However, main disadvantage of FE model is that time-independent variables such as distance or cultural similarities cannot be include in model. In order to overcome this issue, weighted distance

variable is used as it is described in "Data" chapter. In order to compare these three models, different test are used which are as follows;

- **Breusch-Pagan Lagrange Multiplier test:** Compares pooled OLS and RE models. Null hypothesis is that variance is zero. Null hypothesis indicates that pooled OLS is preferred to RE model. If the null hypothesis is rejected, RE model is more efficient than pooled OLS.
- **F-Test:** Compares pooled OLS and FE models. Null hypothesis indicates that pooled OLS is preferred to FE model. If the null hypothesis is rejected, FE model is more efficient than pooled OLS.
- **Hausman Test:** Compares FE and RE models. Null hypothesis indicates that RE is preferred to FE. If the null hypothesis is rejected, FE estimation is more efficient than RE.

Table 25 shows all the possible scenarios for hypothesis testing for pooled OLS, FE and RE and the preferred method for possible scenario. It is seen that if the null hypothesis not rejected for both F-test and Breusch-Pagan LM Test, pooled OLS model is chosen. In other cases, either RE or FE model is chosen. Unless null hypothesis is rejected for both F-test and Breusch-Pagan test, there is no need to do Hausman Test.

Table 25: Hypothesis Testing and Preferred Models

F-Test	Breusch-Pagan LM Test	Hausman Test	Model
H_0 not rejected	H_0 not rejected	Not needed	Pooled OLS
H_0 not rejected	H_0 rejected	Not needed	Random Effects
H_0 rejected	H_0 not rejected	Not needed	Fixed Effects
H_0 rejected	H_0 rejected	H_0 not rejected	Random Effects
H_0 rejected	H_0 rejected	H_0 rejected	Fixed Effects

Another important issue that should be considered for the estimation of the panel data gravity model is the existence of heteroscedasticity. Heteroscedasticity means that variance of the error is not constant over time which can lead the biased results. In order to test the heteroscedasticity, distribution free Wald Test is used which null hypothesis indicates that variance is constant. If there is heteroscedasticity, possible solution is to robust standard errors.

6. Results

As it is previously mentioned, panel data analysis is made for 95 countries between 2007 and 2016. In order to estimate the coefficients and test the hypotheses, GRETL software is used. First of all, basic descriptive statistics for the variables used in equation (9) excluding dummy variables can be seen in Table 26.

Table 26: Descriptive Statistics for variables in Panel Data

	Missing Obs.	Mean	Median	Minimum	Maximum	Std. Dev.
ln(TOUR)	0	11.183	11.242	5.0434	15.535	1.8435
ln(GDPPC)	7	9.2186	9.2344	5.9131	11.689	1.2979
ln(WDIST)	7	1.9187	1.9664	-2.9796	7.6116	2.1806
ln(POP)	0	16.569	16.216	12.649	21.044	1.5511
ln(RP)	3	1.7642	0.91874	-2.0467	9.1571	2.695
DEMDIFF	0	0.58628	0.97	-4.05	4.89	2.2546
TERRDIFF	0	0.14712	0.20632	-9.9883	1.6091	1.5039

As it is previously described in equation (7), trade flows (number of tourists) are positively correlated with GDP and negatively correlated with distance. Therefore, it is expected that the coefficient of ln(GDPPC) to be positive and coefficient of ln(WDIST) to be negative. Increase in relative price indicates that the goods and services are getting more expensive in Turkey for the origin country. Therefore, it is expected for number of tourists to be decrease when the relative price of the origin country increases. Because of that, it is expected for the coefficient of ln(RP) to be negative. As for the population, it is expected to be more tourists from the origin country when the population increases. Therefore, coefficient of ln(POP) is expected to be positive.

Equation (12) shows the DEMDIFF. It is seen that DEMDIFF is the difference between democracy index of origin country and Turkey. Therefore, DEMDIFF increases when the democracy index of the origin country increases or when democracy index of Turkey decreases. So, as the DEMDIFF increases, it is expected for the number of tourists from origin country to be decreased as higher democracy index indicates more political stability. Therefore, the coefficient of DEMDIFF is expected to be negative.

For the terror index, formula is the difference between terror index of Turkey and the origin country which can be seen in equation (13). Therefore, TERRDIFF increases when terror index of Turkey increases or terror index of origin country decreases. Since higher terror index indicates that there are more terror attacks in the country, the coefficient of TERRDIFF is expected to be negative as higher TERRDIFF indicates there will be less incoming tourist to Turkey.

As for the dummy variables, both internal political problems, which is expressed by COUP variable, and foreign policy problems, which are expressed by ISR and RUS variables, expected to have significant negative impact of number of tourists. Coup d'état attempt in 2016 is expected to have negative effect on all the tourist origin countries. Problems with Russia and Israel are expected to have negative effect on number of tourist only for those countries. To sum up, for all the dummy variables, expected coefficient is negative.

Table 27 shows the expected signs for all the explanatory variables in the panel data.

Table 27: Expected signs for the coefficients

Variable	Expected Sign
ln(GDPPC)	(+)
ln(WDIST)	(-)
ln(POP)	(+)
ln(RP)	(-)
DEMDIFF	(-)
TERRDIFF	(-)
COUP	(-)
ISR	(-)
RUS	(-)

In order to determine if there is heteroscedasticity, distribution free Wald Test is made which null hypothesis implies that there is no heteroscedasticity. The results for the test are as follows. As it is seen from the result, p-value is 0. Therefore, null hypothesis is have to be rejected which implies there is strong suspicion of presence of heteroscedasticity. In order to overcome this issue, robust standard errors are used in the models.

$$Chi - square\ (95) = \ 74385.9\ with\ p - value = 0 \quad (19)$$

In all results for all the models, (***) implies significance at %1 level, (**) implies significance at %5 level and (*) implies significance at %10 level.

First of all, panel data gravity model estimation is made using pooled OLS model with robust standard errors and the estimated coefficients and statistics can be seen in Table 28 and Table 29 respectively. From Table 28, it is seen that, constant, GDPPC, WDIST, POP and ISR are all significant at %1 level. Besides that, COUP and RUS are significant at 5% level. However, RP, DEMDIFF and TERRDIFF are not significant. As for the effect of the variables, for instance, 1% increase in ln(GDPPC) increases number of tourist arrivals 2.26%. and 1% increase in ln(WDIST) decreases the number of tourists by 1.56%.

When the signs of the variables are examined, it is seen that GDPPC, WDIST, POP, TERRDIFF, COUP and ISR have the expected signs as it is described in Table 27. However, RP, DEMDIFF and RUS do not have the expected signs. Moreover, even though, TERRDIFF has the expected sign, it is not significant.

Table 28: Pooled OLS model results

	Coefficient	Std. Error	t-ratio	p-value	
CONST	-44.6999	4.24315	-10.53	<0.0001	***
ln(GDPPC)	2.26894	0.191179	11.87	<0.0001	***
ln(WDIST)	-1.56767	0.124737	-12.57	<0.0001	***
ln(POP)	2.28948	0.180183	12.71	<0.0001	***
ln(RP)	0.0176845	0.0484138	0.3653	0.7157	
DEMDIFF	0.0544315	0.0623659	0.8728	0.385	
TERRDIFF	-0.000823443	0.0586673	-0.01404	0.9888	
COUP	-0.225929	0.0882917	-2.559	0.0121	**
ISR	-2.48839	0.222697	-11.17	<0.0001	***
RUS	0.677653	0.308551	2.196	0.0305	**

When the statistics of the pooled OLS model is examined, it is seen that the R-squared and adjusted R-squared value is little more than 0.70. This indicates that approximately 70% of the data can be explained by the pooled OLS model.

Table 29: Pooled OLS model statistics

Mean dependent var	11.18292	S.D. dependent var	1.844872
Sum squared residual	951.6304	S.E. of regression	1.009935
R-squared	0.703186	Adjusted R-squared	0.700323
Log-likelihood	-1342.355	Akaike criterion	2704.709
Schwarz criterion	2753.2	Hannah-Quinn	2723.191
Rho	0.952237	Durbin-Watson	0.07213

Second model which is used for estimation is the RE model using GLS estimation. Again in this model, robust standard errors are used. Table 30 and Table 31 shows the estimated coefficients and the statistics for the RE model respectively.

From Table 30, it is seen that RP and TERRDIFF are significant at %5 level. All the other variables including constant are significant at %1 level. When compared to pooled OLS model, it is seen that the coefficients of GDDPC, POP, RP and ISR are decreased. For instance, in pooled OLS, 1% increase in GDP per capita increases tourist arrivals by 2.26%. However, in RE model, the increase in tourist arrivals in the case of 1% increase in GDP per capita is 1.75%. As opposed to this, absolute value of coefficients of DEMDIFF, COUP and RUS are increased compared to pooled OLS model. For instance, in RE model, effect of coup on tourist arrivals is -0.31 which is higher than -0.22, the coefficient from the pooled OLS model.

For the economical variables, GDDPC has the expected sign similar to pooled OLS model. In addition to pooled OLS mode, RP also has the expected sign in RE model. Moreover, GDPPC and POP have the expected signs like pooled OLS. However, for the political variables, it is seen that even though dummy variables for COUP, RUS and ISR have the expected signs, TERRDIFF and DEMDIFF does not have the expected signs.

Table 30: Random effects model results

	Coefficient	Std. Error	z	p-value	
CONST	-39.7461	3.46176	-11.48	<0.0001	***
ln(GDPPC)	1.7553	0.123764	14.18	<0.0001	***
ln(WDIST)	-1.3335	0.118623	-11.24	<0.0001	***
ln(POP)	2.25774	0.178489	12.65	<0.0001	***
ln(RP)	-0.0962959	0.0395944	-2.432	0.015	**
DEMDIFF	0.152267	0.0389452	3.91	<0.0001	***
TERRDIFF	0.0364041	0.0147353	2.471	0.0135	**
COUP	-0.313314	0.0361975	-8.656	<0.0001	***
ISR	-1.2337	0.0174982	-70.5	<0.0001	***
RUS	-1.03328	0.168439	-6.134	<0.0001	***

Table 31: Random effects model statistics

Mean dependent var	11.18292	S.D. dependent var	1.844872
Sum squared residual	1241.377	S.E. of regression	1.152865
Log-likelihood	-1467.679	Akaike criterion	2955.358
Schwarz criterion	3003.849	Hannah-Quinn	2973.84

Final model used for estimation of tourism demand in Turkey is the FE model. Table 32 and Table 33 show the estimation results and statistics for the FE model respectively.

First of all, as it is seen in Table 32, except for TERRDIFF, all variables including constant are significant at 1% level. TERRDIFF is significant at 5% level. When the signs of the variables are investigated, it is seen that, besides the political variables, all variables have the expected sign. As for the political variables, dummy variables for COUP, ISR and RUS all have negative coefficients as expected. However, similar to RE model, TERRDIFF and DEMDIFF have positive signs opposite to what is expected.

It is seen that POP has the highest positive effect on tourist arrivals. 1% increase in population increases tourist arrivals by 3.71%. As for the highest negative effect, Gaza crisis with Israel has significant negative impact on tourist arrivals.

Table 32: Fixed effects model results

	Coefficient	Std. Error	t-ratio	p-value	
CONST	-58.1044	6.28561	-9.244	<0.0001	***
ln(GDPPC)	0.987038	0.151003	6.537	<0.0001	***
ln(WDIST)	-0.594659	0.154418	-3.851	0.0001	***
ln(POP)	3.71247	0.385204	9.638	<0.0001	***
ln(RP)	-0.132203	0.050546	-2.616	0.0091	***
DEMDIFF	0.125934	0.0317898	3.961	<0.0001	***
TERRDIFF	0.0384433	0.01503	2.558	0.0107	**
COUP	-0.36793	0.0425904	-8.639	<0.0001	***
ISR	-1.19521	0.0159731	-74.83	<0.0001	***
RUS	-0.966187	0.0630263	-15.33	<0.0001	***

From Table 33, it is seen that LSDV R-squared is significantly high. More than 98% of the data can be explained by the FE model using LSDV estimation. Even though within R-squared value is lower compared to pooled OLS model, still more than 57% of the data can be explained.

Table 33: Fixed effects model statistics

Mean dependent var	11.18292	S.D. dependent var	1.844872
Sum squared residual	58.7889	S.E. of regression	0.264708
LSDV R-squared	0.981664	Within R-squared	0.578394
Log-likelihood	-29.59317	Akaike criterion	267.1863
Schwarz criterion	771.4892	Hannah-Quinn	459.4017
Rho	0.535797	Durbin-Watson	0.749639

As it is mentioned in the "Methodology" chapter, in order to determine which model is the most efficient one, hypothesis testing is made. First of all, in order to compare pooled OLS and RE models, Breusch-Pagan Lagrange multiplier is applied which the test statistics are as follows. It is seen that p-value equals to zero. Therefore, null hypothesis which is in favor of pooled OLS is rejected. This means that RE model is preferred to pooled OLS model.

$$LM = 3457.86 \; with \; p - value = prob(chi - square(1) > 3457.86) = 0 \qquad (20)$$

In order to compare pooled OLS model and FE model, F-test is applied which the test statistics are as follows. As same with Breusch-Pagan Lagrange Multiplier Test, p-value equals to zero which indicates that null hypothesis is rejected. Therefore, FE model is preferred to pooled OLS model.

$$F(94,839) = 135.554 \; with \; p - value = 0 \tag{21}$$

Final hypothesis testing is made in order to compare FE and RE models which the result of the Hausman Test is as follows. Similar to previous tests, p-value is significantly small which indicates that null hypothesis is rejected. Therefore, FE model is preferred to RE model.

$$\begin{aligned} H = 188.488 \; with \; p - value &= prob(chi - square(9) > 188.488) \\ &= 8.52881e - 036 \end{aligned} \tag{22}$$

As it is seen in Table 25, FE model is the preferred model because null hypothesis is rejected for all three tests.

The main problem with FE model is that DEMDIFF and TERRDIFF variables do not have the expected signs. As it is mentioned in the "Methodology" chapter, DEMDIFF and TERRDIFF depend on difference between democracy index and terror index difference of Turkey and origin country respectively. Therefore, instead of using the differences of indexes, just Turkey's democracy and terror index is used and the estimation is made using FE model. The results and statistics for the model can be seen in Table 34 and Table 35 respectively. In the model, TI_TUR corresponds to terror index of Turkey and DI_TUR corresponds to democracy index of Turkey.

First of all, as it is seen in Table 34, all the variables including constant are significant at 1% level. In the first FE model, it is seen that TERRDIFF is significant at 5% level. If the terror index is used, it is seen that TI_TUR is significant at %1 level.

When the signs are investigated, it is seen that besides TI_TUR and DI_TUR, all the variables have the expected signs similar to the previous FE model. It is expected that democracy index of Turkey should be positively correlated with tourist arrivals and terror index of Turkey should be

negatively correlated with tourist arrivals. However, it is seen that DI_TUR has positive coefficient and TI_TUR has negative coefficient opposite to expectations.

Table 34: Fixed effects model with indexes for Turkey results

	Coefficient	Std. Error	t-ratio	p-value	
CONST	-53.2386	6.65149	-8.004	<0.0001	***
ln(GDPPC)	0.86708	0.1465	5.919	<0.0001	***
ln(WDIST)	-0.441545	0.142709	-3.094	0.002	***
ln(POP)	3.5337	0.406618	8.69	<0.0001	***
ln(RP)	-0.121811	0.0466927	-2.609	0.0092	***
TI_TUR	0.0879564	0.0239485	3.673	0.0003	***
DI_TUR	-0.190624	0.043266	-4.406	<0.0001	***
COUP	-0.438165	0.036248	-12.09	<0.0001	***
ISR	-1.1579	0.0194711	-59.47	<0.0001	***
RUS	-1.02938	0.0618105	-16.65	<0.0001	***

When the statistics are investigated, it is seen that both LSDV R-squared and within R-squared values are almost same with the previous FE model.

Table 35: Fixed effects model with indexes for Turkey statistics

Mean dependent var	11.18292	S.D. dependent var	1.844872
Sum squared residual	58.70723	S.E. of regression	0.264524
LSDV R-squared	0.981689	Within R-squared	0.57898
Log-likelihood	-28.93765	Akaike criterion	265.8753
Schwarz criterion	770.1782	Hannah-Quinn	458.0907
rho	0.541561	Durbin-Watson	0.73851

Another approach is to exclude dummy variable for COUP. The reason for that is Turkey has the highest number of terror attacks in 2016. Moreover, Turkey experienced coup attempt in 2016. Since there is significant decrease in number of tourists in 2016, those two variables may interfere each other. Therefore, estimation is also made for FE models without the COUP variable.

Table 36 and Table 37 show the results and statistics for FE model in Table 32 without the dummy variable for coup attempt in 2016. It is seen that TERRDIFF has the expected negative sign. However, TERRDIFF has no level of significance in this model.

Table 36: Fixed effects model results without COUP variable

	Coefficient	Std. Error	t-ratio	p-value	
CONST	−54.6124	6.40662	−8.524	<0.0001	***
ln(GDPPC)	1.03901	0.150139	6.92	<0.0001	***
ln(WDIST)	−0.578279	0.146863	−3.938	<0.0001	***
ln(POP)	3.46904	0.392036	8.849	<0.0001	***
ln(RP)	−0.112307	0.0432477	−2.597	0.0096	***
DEMDIFF	0.0754128	0.0319632	2.359	0.0185	**
TERRDIFF	-0.0250877	0.0192693	−1.302	0.1933	
ISR	−1.15043	0.0147621	−77.93	<0.0001	***
RUS	−1.19921	0.0494074	−24.27	<0.0001	***

When compared to the model in Table 32, it is seen that there is decrease in both LSDV R-squared and within R-squared values.

Table 37: Fixed effects model statistics without COUP variable

Mean dependent var	11.18292	S.D. dependent var	1.844872
Sum squared residual	66.24238	S.E. of regression	0.28082
LSDV R-squared	0.979339	Within R-squared	0.524942
Log-likelihood	−85.87491	Akaike criterion	377.7498
Schwarz criterion	877.2036	Hannah-Quinn	568.117
rho	0.439647	Durbin-Watson	0.907096

Table 38 and Table 39 show the results and statistics for the FE model in Table 34 without the COUP variable. It is seen that, compared to FE model in Table 34, it is seen that, with the exclusion of COUP variable, coefficient of terror index of Turkey becomes negative and significant at 1% level as desired.

Table 38: Fixed effects model with indexes for Turkey results without COUP variable

	Coefficient	Std. Error	t-ratio	p-value	
CONST	-57.2291	3.69876	−15.47	<0.0001	***
ln(GDPPC)	1.05153	0.111352	9.443	<0.0001	***
ln(WDIST)	-0.622432	0.129578	−4.804	<0.0001	***
ln(POP)	3.6897	0.204656	18.03	<0.0001	***
ln(RP)	-0.126586	0.0402211	−3.147	0.0017	***
TI_TUR	-0.139403	0.0330898	−4.213	<0.0001	***
DI_TUR	-0.172625	0.0543205	−3.178	0.0015	***
ISR	-1.16774	0.181198	−6.445	<0.0001	***
RUS	-1.21499	0.296286	−4.101	<0.0001	***

It is seen that similar to the statistics in Table 37, with the exclusion of COUP variable, both LSDV R-squared and within R-squared values are decrease compared to FE model in Table 34.

Table 39: Fixed effects model with indexes for Turkey results without COUP variable

Mean dependent var	11.18292	S.D. dependent var	1.844872
Sum squared residual	65.57566	S.E. of regression	0.279403
LSDV R-squared	0.979547	Within R-squared	0.529723
Log-likelihood	−81.10528	Akaike criterion	368.2106
Schwarz criterion	867.6644	Hannah-Quinn	558.5777
rho	0.422065	Durbin-Watson	0.931386

7. Conclusion

In the light of the things that are mentioned throughout the thesis, first of all, it can be concluded that it is important to analyze the tourism demand for Turkey. The reason for that is Turkey is one of the highest tourist incoming countries in the world. Moreover, in the examined period, which is between 2007 and 2016, Turkey experienced the maximum number of tourists and a sharp decrease afterwards. Besides that, Turkey had faced with political problems and terror attacks in that period.

In order to analyze the tourism demand of Turkey, panel gravity model is used with economic, geographical and political variables. As there is different estimation methods for panel data, three commonly used methods are used with the hypotheses testing, it is founded out that FE model is the most efficient one in explaining the tourism demand.

As for the results, it is founded out that the commonly used variables in tourism demand analysis, which are economic variables such as GDP per capita and relative prices have the expected impact on tourist arrivals. It is founded out that GDP per capita of tourist origin countries have significant positive impact on tourist arrivals to Turkey. Besides that, relative prices of tourist origin countries have significant negative impact on tourist arrivals again as expected. Therefore, these variables are matching with the hypotheses described in the “Introduction” chapter.

Besides the economical variables, other variables used in the analysis also have the expected outcomes. To start with, it is founded out that weighted distance has significant negative impact on tourist arrivals. Therefore, Turkey attracts more tourists from closer countries. Population of the tourist origin countries also has significant positive impact on tourist arrivals which indicates that Turkey attracts more tourists from higher populated countries.

As it is previously described in “Introduction” chapter, key contribution of this thesis is to include political variables in the analysis of tourism demand of Turkey. It is founded out that difference in terror and democracy indexes between Turkey and origin countries does not have the expected effect on tourist arrivals. It is expected that if the difference between democracy index of origin country and Turkey increases, number of tourists form the origin country should decrease. However, it is founded out that it does not have negative impact as opposed to stated

hypothesis. Similar to democracy index, it is expected that if the terror index difference between Turkey and origin country increases, tourist arrivals from the origin country should decrease as stated in hypothesis. However, it is founded out that this difference does not have negative impact on tourist arrivals.

Dummy variables which are related with both internal and foreign political problems of Turkey have significant impact on tourist arrivals. First of all, it is seen that coup d'état attempt in 2016 has significant negative impact on tourist arrivals as expected. As for the foreign policy problems, it is seen that Gaza crisis with Israel and plane crisis with Russia also have negative impact on tourist arrivals as expected.

In order to measure the effect of democracy and terrorism, another approach used in the thesis is to examine only the democracy and terror indexes of Turkey. Therefore, instead of the difference of indexes between Turkey and tourist origin country, just the indexes of Turkey is used. With this approach, it is founded out that similar to the previous approach; results are different from what is expected. Results indicate that terror index of Turkey does not have negative impact on tourist arrivals and democracy index of Turkey does not have positive impact on tourist arrivals.

Final approach is to exclude the coup attempt from the estimation. With this approach, it is seen that terror index difference between Turkey and origin country has negative impact on tourist arrivals even though it is not statistically significant. In addition, for the estimation method explained in the previous paragraph, terror index of Turkey has significant negative impact on tourist arrivals as expected.

To sum up, this thesis will contribute to the academic literature and extend the previous researches on tourism demand. Compared to other literature about tourism demand of Turkey, this thesis extends the number of tourist origin countries and observes the time period when Turkey had peak and sharp decrease in number of tourists. Besides that, as an addition to the previous researches, key contribution of this thesis is to include political variables, terrorism, internal and foreign policy problems in the analysis.

8. References

AKTÜRK, T. & KÜÇÜKÖZMEN, C.C. (2006): "An Econometric Approach to Tourism Demand: Arrivals from UK and Australia to Turkey." *The Third Graduate Research in Tourism Conference*

ALTINAY, L. & BOWEN, D. (2006): "Politics and Tourism Interface: The Case of Cyprus." *Annals of Tourism Research* **33(4)**: pp. 939-956

ASLAN, A., KAPLAN M. & KULA, F. (2008): "International Tourism Demand for Turkey: A Dynamic Panel Data Approach." *Munich Personal RePEc Archive (MPRA)*

BLUE FLAG GLOBAL (2017). *All Blue Flag Awarded Sites per Country.* [online] Available at: http://www.blueflag.global/all-bf-sites/

BRAKKE, M. (2004): "International Tourism, Demand, and GDP Implications: A Background and Empirical Analysis." *Undergraduate Economic Review* **1(1)**

CAUSEVIC, S. & LYNCH, P. (2013): "Political (In)Stability and Its Influence on Tourism Development". *Tourism Management* **34**: pp. 145-157

CHASAPOPOULOS, F., DEN BUTTER, F.A.G. & MIHAYLOV, E. (2014): "Demand for Tourism in Greece: A panel data analysis using the gravity model." *International Journal of Tourism Policy* **6(3)**

CULIUC, A. (2014): "Determinants of International Tourism*" IMF Working Paper* **14(82)**

DAVIDOVA, L. (2015): "Various Estimation Techniques of the Gravity Model of Trade". Diploma Thesis (Mgr.) *Charles University in Prague, Faculty of Social Sciences, Institute of Economic Studies*. Supervisor: doc. Ing. Vladimír Benáček, CSc.

DUPEYRAS, A. AND MACCALLUM, N. (2013): "Indicators for Measuring Competitiveness in Tourism: A Guidance Document", *OECD Tourism Papers*

DWYER, L., FORSYTH, P. & RAO, P. (2001): "PPPs and the Price Competitiveness of International Tourism Destinations" *Joint World Bank-OECD Seminar on Purchasing Power Parities*

ECONOMIST INTELLIGENCE UNIT (2018): "Democracy Index 2017." *The Economist Intelligence Unit*

FLETCHER, J. & MORAKABATI, Y. (2008): "Tourism Activity, Terrorism and Political Instability within the Commonwealth: The Cases of Fiji and Kenya." *International Journal of Tourism Research* **10(6)**: pp. 537-556

GAN, Y. (2015): "An Empirical Analysis of the Influence of Exchange Rate and Prices on Tourism Demand." *ISCTE Business School*

GLOBAL TERRORISM DATABASE. [online] Available at https://www.start.umd.edu/gtd/

GÖRMÜŞ, S. & GÖÇER, I. (2010): "The Socio-Economic Determinant of Tourism Demand in Turkey: A Panel Data Approach." *International Research Journal of Finance and Economics* **55**: pp. 88-99.

GREENE, W.H. (2011): *Econometric Analysis*. Prentice Hall. ISBN: 0-13-139538-6

HEAD, K. & MAYER, T. (2002): "Illusory Border Effects: Distance mismeasurement inflates estimates of home bias in trade." *CEPII Working Paper*

HEAD, K. & MAYER, T. (2013): "Gravity Equations: Workhorse, Toolkit and Cookbook." *CEPII Working Paper*

ICOZ, O., VAR, T. AND KOZAK, K. (1998): "Tourism demand in Turkey." *Annals of Tourism Research* **25(1)**: pp. 236-240.

KAPLAN, F. & AKTAŞ, A.R. (2016): "The Turkey Tourism Demand: A Gravity Model." *The Empirical Economics Letters* **15(3)**: pp. 265-272

KARAGÖZ, K. & SELIM, S. (2014): "Determinants to Tourist Inflows to Romania: Evidence From Augmented Panel Gravity Model." *Annals of Faculty of Economics* **1(1)**: pp. 347-358

KEUM, K. (2008): "Tourism flows and trade theory: a panel data analysis with the gravity model." *The Annals of Regional Science* **44(3)**: pp. 541-557

KNOEMA, *Contribution of travel and tourism to GDP as a share of GDP*. [online] Available at: https://knoema.com/atlas/Turkey/topics/Tourism/Travel-and-Tourism-Total-Contribution-to-GDP/Contribution-of-travel-and-tourism-to-GDP-percent-of-GDP

LI, G., SONG, H., & WITT, S.F. (2005), "Recent developments in econometric modeling and forecasting." *Journal of Travel Research* **44(1)**: pp. 82–99

LIM, C. (1997): "Review of International Tourism Demand Models." *Annals of Tourism Research* **24(4)**: pp. 835-849

LLORCA-VIVERO, R. (2008): "Terrorism and International Tourism: New evidence." *Defence and Peace Economics* **19(2)**: pp. 169-188

MILLINGTON, A. (2016): "The 20 most visited cities around the world in 2016." *Business Insider UK*. [online] Available at: http://uk.businessinsider.com/the-most-visited-cities-around-the-world-in-2016-2016-9

MORLEY, C., ROSSELLO, J. & SANTANA-GALLEGO, M. (2014): "Gravity models for tourism demand: theory and use." *Annals of Tourism Research* **48**: pp. 1-10

NEUMAYER, E. (2004): "The Impact of Political Violence on Tourism: Dynamic Cross-National Estimation." *Journal of Conflict Resolution* **48(2)**: pp. 259-281

PARK J. & JANG, S. (2014): "An Extended Gravity Model: Applying Destination Competitiveness". *Journal of Travel & Tourism Marketing* **31(7)**: pp. 799-816.

POLAT, S. (2016): "Crisis and Tourism in Turkey-Israel Relations" *The Journal of International Social Research* **9(43)**: pp. 891-905

SAHA, S., SU, J. & CAMPBELL, N. (2017): "Does Political and Economic Freedom Matter for Inbound Tourism? A Cross-National Panel Data Estimation." *Journal of Travel Research* **56(2)**: pp. 221-234

SANTANA-GALLEGO, M., ROSSELLO-NADAL, J. & FOURIE, J. (2016): "The effects of terrorism, crime and corruption on tourism." *ERSA Working Paper* **595**

SARAY, O. AND K. KARAGÖZ (2010): "Determinants of tourist inflows in turkey: Evidence from panel gravity model". *ZKU Journal of Social Sciences* **6(11)**: pp. 33-46

SONG, H., LI, G., WITT, S.F., & FEI B. (2010): "Tourism Demand Modelling and Forecasting: How Should Demand Be Measured?" *Tourism Economics* **16(1)**: pp. 63-81.

SÖNMEZ, S. (1998): "Tourism, Terrorism and Political Instability." *Annals of Tourism Research* **25(2)**: pp. 416-456

ŞAHIN, A. (1990): İktisadi Kalkınmadaki Önemi Bakımından Türkiye'de Turizm Sektöründeki Gelişmelerin Değerlendirilmesi. *TOBB*. ISBN: 9755120440

TOURISM DATA. *Association of Turkish Travel Agencies (TURSAB).* [online] Available at: https://www.tursab.org.tr/en/tourism-data/statistics

TOURISM STATISTICS. *Turkish Statistical Institute*. [online] Available at: http://www.turkstat.gov.tr/PreTablo.do?alt_id=1072

TOURISM STATISTICS, *Republic of Turkey, Ministry of Culture and Tourism.* [online] Available at: *http://www.kultur.gov.tr/EN,153017/tourism-statistics.html*

UN GENERAL ASSEMBLY (1994): "Declaration on Measures to Eliminate International Terrorism." *Annex to Resolution 49/60*

UYSAL, M. & CROMPTON, J.L. (1984): "Determinants of demand for international tourist flows to Turkey." *Tourism Management* **5(4)**: pp. 288-297

VIETZE, C. (2012): "Cultural effects on inbound tourism into the USA: a gravity approach." *Tourism Economics* **18(1)**: pp. 121-138

WORLD BANK DATABASE. [online] Available at: https://data.worldbank.org/

YOLAL, M. (2016): *History of Tourism Development in Turkey*, chapter 2 in "Alternative Tourism of Turkey: Role, Potential Development and Sustainability" (ed. I. Egresi), pp. 23-33. Springer International

9. Appendix

9.1. List of countries

List of Countries				
Afghanistan	Croatia	Israel	New Zealand	Slovenia
Albania	Czech Republic	Italy	Nigeria	South Africa
Algeria	Denmark	Japan	Norway	South Korea
Argentina	Dominican Republic	Jordan	Oman	Spain
Armenia	Ecuador	Kazakhstan	Pakistan	Sudan
Australia	Egypt	Kenya	Panama	Sweden
Austria	Estonia	Kuwait	Paraguay	Switzerland
Azerbaijan	Finland	Kyrgyzstan	Peru	Tajikistan
Bahrain	France	Latvia	Philippines	Thailand
Bangladesh	Georgia	Lebanon	Poland	Tunisia
Belarus	Germany	Libya	Portugal	Turkmenistan
Belgium	Greece	Lithuania	Qatar	UAE
Bosnia and Herzegovina	Hungary	Luxembourg	Romania	Ukraine
Brazil	Iceland	Macedonia	Russia	United Kingdom
Bulgaria	India	Malaysia	Saudi Arabia	Uruguay
Canada	Indonesia	Mexico	Senegal	USA
Chile	Iran	Moldova	Serbia	Uzbekistan
China	Iraq	Morocco	Singapore	Venezuela
Colombia	Ireland	Netherlands	Slovakia	Yemen

9.2. Tourist Arrivals

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	16919	11473	21508	12511	16395	15373	19704	22599	31983	50197
Albania	57601	63146	59958	49954	53141	59565	65113	76273	80032	83029
Algeria	45006	63904	91222	67954	84844	104489	118189	160052	171873	176233
Argentina	14600	18599	20578	22255	27136	28559	46729	44407	82977	62394
Armenia	53142	63855	64982	69323	72393	70956	73365	67198	48522	39063
Australia	109865	124400	129642	131685	156009	164899	190457	200730	225762	97626
Austria	472482	520334	548117	500321	528966	505560	518273	512339	486044	310946
Azerbaijan	434577	459593	424155	486381	578685	593238	630754	657684	602488	606223
Bahrain	5829	8081	9090	9375	9712	13342	16230	24305	32476	41505
Bangladesh	2351	2950	3599	2190	6168	6652	8856	12706	12212	8951
Belarus	106578	152961	142422	152421	123607	138007	200659	223975	204355	113793
Belgium	542712	596442	592078	543003	585860	608071	651596	660857	617406	413614
Bosnia	50437	58910	52271	47361	56522	61851	72086	83258	85434	66177
Brazil	33136	43647	53574	65246	89422	88903	113433	91627	85473	42530
Bulgaria	1239667	1255343	1406604	1433970	1491561	1492073	1582912	1693591	1821480	1690766
Canada	128567	147631	155270	152556	191903	182252	199497	190116	187615	106285
Chile	7112	8580	7612	8183	11964	12765	15905	17451	24307	10421
China	63884	61882	69336	77142	96701	114582	138876	199746	313704	167570
Colombia	5066	6070	7248	7129	9853	12987	21979	23378	26046	19416
Croatia	29470	31186	31407	33563	41959	47144	44058	45297	38598	21346
Czech Republic	129730	158858	164733	174426	223369	223986	217254	226189	212464	87328
Denmark	265429	276805	296085	314446	369867	391312	402818	408287	408841	329618
Dominican Republic	1894	948	913	1467	2924	2069	727	1349	2583	1620
Ecuador	2309	2308	2478	2704	3892	4433	4780	5093	6791	4323
Egypt	52946	57994	66912	61560	79665	112025	107437	108762	100040	94871

Estonia	24369	33752	36413	35136	34921	35459	48537	55649	63363	35549
Finland	84378	102883	136489	143204	186562	195083	219044	228138	213805	122185
France	768167	885006	932809	928376	1140459	1032565	1046010	1037152	847259	555151
Georgia	630979	830184	995381	1112193	1152661	1404882	1769447	1755289	1911832	2206266
Germany	4149805	4415525	4488350	4385263	4826315	5028745	5041323	5250036	5580792	3890074
Greece	447950	572212	616489	670297	702017	669823	703168	830841	755414	593150
Hungary	82718	95414	82684	90944	103918	94409	97074	119977	140197	64737
Iceland	9103	9374	7838	6476	6156	5797	4909	8691	9579	3314
India	45175	55798	55114	63406	73371	90934	95014	119503	131869	79316
Indonesia	11792	15627	23361	24349	40282	56113	57385	59486	56867	47232
Iran	1058206	1134965	1383261	1885097	1879304	1186343	1196801	1590664	1700385	1665160
Iraq	180217	250130	285229	280328	369033	533149	730639	857246	1094144	420831
Ireland	109287	115388	117360	111065	118620	110863	112665	105001	101379	54221
Israel	511435	558183	311582	109559	79140	83740	164917	188608	224568	293988
Italy	514803	600261	634886	671060	752238	714041	731784	697360	507897	213227
Japan	168852	149731	147641	195404	188312	203592	174150	170550	104847	44695
Jordan	61002	74340	87694	96562	94914	102154	102871	131329	162866	203179
Kazakhstan	195219	213072	219445	247784	315907	380046	425773	437971	423744	240188
Kenya	3793	3627	4991	4319	4541	5510	6226	6880	7506	5986
Kuwait	12589	22084	26801	27281	41617	65167	88238	133128	174486	179938
Kyrgyzstan	44638	47730	40882	35665	41197	42866	64905	81941	88369	88877
Latvia	57436	58460	40686	39102	45074	45725	55058	58981	60485	34861
Lebanon	45461	53948	71771	134554	137110	144491	143629	161274	197552	191642
Libya	33700	43779	64721	60917	53562	213890	264266	267501	234762	72014
Lithuania	71791	92939	76730	71992	76036	69520	90180	106459	112654	109749
Luxembourg	6785	10852	9687	11262	13286	14034	15733	15310	12764	4831
Macedonia	93705	106645	107389	115541	130648	137579	140793	156138	167428	146008
Malaysia	23851	26881	29557	32458	36222	41169	55139	69968	69616	49255
Mexico	25630	26997	21912	22908	29606	31576	36617	42663	45902	20958

Moldova	145341	141514	117856	96196	101124	108032	111915	132338	149800	140117
Morocco	37788	44023	65875	57447	68645	77884	82579	89562	109775	87660
Netherlands	1053403	1141580	1127150	1073064	1222823	1273593	1312466	1303730	1232487	906336
New Zealand	21058	23466	23898	24636	26709	28278	30667	32933	36915	15287
Nigeria	5600	7237	9420	9172	14564	19897	22869	28387	27711	25264
Norway	184446	250458	262314	299405	375502	406879	412870	326292	282210	156215
Oman	399	5904	5203	5408	5998	7959	8956	14283	18787	13891
Pakistan	21307	22473	24004	22540	26735	28394	34170	48420	59700	52023
Panama	671	732	1398	776	1347	1529	1670	1764	1997	1461
Paraguay	155	323	385	431	586	700	937	825	1263	974
Peru	1616	1735	1926	2016	2697	2952	4393	5733	7281	4667
Philippines	24757	28222	35814	31658	51610	65272	59734	69229	83515	59015
Poland	276783	397682	419475	428275	486319	428440	423129	510569	500779	205701
Portugal	30512	36977	46900	53373	52319	46606	45928	52851	56312	27015
Qatar	3783	4862	4902	6043	7661	13971	18630	29743	35832	32681
Romania	390505	447419	366698	355144	390248	385055	395214	426585	441097	357473
Russia	2465336	2879278	2694733	3107043	3468214	3599925	4269306	4479049	3649003	866256
Saudi Arabia	41490	55636	66938	84934	116711	175467	234220	341786	450674	530410
Senegal	2434	2971	4077	4755	5579	5650	4811	5133	5483	5705
Serbia	137100	170399	102202	113465	137934	157568	169988	189396	178997	110594
Singapore	17155	19121	20451	18994	20957	22206	22403	29449	26892	15962
Slovakia	54729	69168	80687	91765	122088	126974	127455	136899	151514	61477
Slovenia	35412	41301	38134	38597	41870	39899	37692	41799	39734	18863
South Africa	14420	20774	24402	27177	34394	40771	44798	43049	47679	29316
South Korea	135244	119500	89148	123315	149943	159084	187040	248910	228694	106904
Spain	288358	342104	376215	321325	300084	278164	290422	283926	236063	106582
Sudan	5989	8987	10581	6634	7458	8161	9319	10714	11434	10562
Sweden	338182	404092	401740	447270	571917	617811	692186	667551	624649	320580
Switzerland	229688	252925	283060	271139	328825	354461	379344	394458	380338	215194

Tajikistan	36415	36262	19816	17737	16822	22823	27174	34678	31917	24768
Thailand	10999	10141	9992	9282	11067	12211	20783	26219	22125	12483
Tunisia	41890	42840	56707	57855	63176	86595	91683	100612	102341	100185
Turkmenistan	76334	88915	112358	114390	137476	135168	148709	180395	174330	165762
UAE	13005	19676	22051	30480	35579	48071	52424	53736	51600	38315
UK	1916130	2169924	2426749	2673605	2582054	2456519	2509357	2600360	2512139	1711481
Ukraine	593302	730869	574700	568227	602404	634663	756187	657051	706551	1045043
Uruguay	2070	2481	4246	2903	3735	3592	4834	5218	6334	2577
USA	642911	679445	667159	642768	757143	771837	785971	784917	798787	459493
Uzbekistan	43082	69127	73910	68124	85011	105976	129292	143354	143331	134330
Venezuela	6604	9604	9284	6769	8557	9600	11271	6975	6435	5035
Yemen	4027	4971	6181	6344	8066	11826	17354	26033	24237	25325

9.3. GDP Per Capita

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	369.836	373.361	445.893	553.3	603.537	669.009	638.613	629.345	569.578	561.779
Albania	3603.01	4370.54	4114.14	4094.36	4437.18	4247.61	4413.08	4578.67	3934.9	4124.98
Algeria	3935.18	4905.25	3868.83	4463.39	5432.41	5565.13	5471.12	5466.43	4160.22	3916.88
Argentina	7193.62	8953.36	8161.31	10276.3	12726.9	12969.7	12976.6	12245.3	13467.1	12440.3
Armenia	3138.81	4010.03	2993.83	3218.38	3526.98	3684.8	3843.59	3994.71	3617.94	3614.69
Australia	40992	49664.7	42743	51874.1	62245.1	67635.3	67708.7	62099.6	56408.3	49755.3
Austria	46855.8	51708.8	47963.2	46858	51375	48567.7	50719.4	51733.5	44255.6	44757.6
Azerbaijan	3851.44	5574.6	4950.29	5842.81	7189.69	7496.34	7875.76	7891.3	5500.31	3878.71
Bahrain	20977.1	23067.6	19356.7	20722.1	22512.2	23649.4	24737.2	24983.4	22688.9	22579.1
Bangladesh	541.065	615.778	681.121	757.672	835.789	856.343	951.889	1084.57	1210.16	1358.78
Belarus	4735.48	6377.37	5176.26	6029.4	6519.23	6940.16	7978.87	8318.51	5949.11	4989.43
Belgium	44403.8	48424.6	44880.6	44380.2	47702.8	44740.6	46582.7	47379.2	40375.4	41271.5
Bosnia	4180.29	5078.31	4701.33	4614.83	5054.33	4722.01	5042.58	5204.24	4584.24	4808.41
Brazil	7313.56	8787.61	8553.38	11224.2	13167.5	12291.5	12216.9	12026.6	8757.21	8649.95
Bulgaria	5932.9	7261.75	6969.56	6843.26	7813.8	7378.03	7674.86	7853.34	6993.48	7469.03
Canada	44544.5	46596.3	40773.5	47447.5	52082.2	52496.7	52418.3	50453.5	43335.2	42183.3
Chile	10526.9	10781.4	10243.3	12860.2	14705.7	15431.9	15941.4	14817.4	13653.2	13792.9
China	2695.37	3471.25	3838.43	4560.51	5633.8	6337.88	7077.77	7683.5	8069.21	8123.18
Colombia	4674.22	5433.72	5148.42	6250.65	7227.74	7884.98	8030.59	7913.38	6044.53	5805.61
Croatia	13546.7	15893.9	14157.1	13505.7	14539.2	13236	13574.7	13467.5	11638.1	12149.2
Czech Republic	18373.6	22698.9	19741.6	19808.1	21717.5	19729.9	19916	19744.6	17715.6	18483.7
Denmark	58487	64322.1	58163.3	58041.4	61753.7	58507.5	61191.2	62549	53013	53578.8
Dominican Republic	4647.31	5011.04	4952.68	5451.07	5759.06	5968.88	6027.06	6268.69	6468.47	6722.22
Ecuador	3590.72	4274.95	4255.57	4657.3	5223.35	5702.1	6074.09	6396.63	6150.16	6018.53
Egypt	1640.48	2011.25	2291.67	2602.48	2747.48	3181.44	3213.39	3327.75	3547.71	3477.85
Estonia	16586.4	18094.5	14726.3	14638.6	17454.8	17421.9	19072.2	19949.6	17155.9	17736.8

Finland	48288.5	53401.3	47107.2	46202.4	50790.7	47415.6	49638.1	49914.6	42419.6	43401.2
France	41600.6	45413.1	41631.1	40703.3	43810.2	40838	42554.1	42955.2	36526.8	36857.1
Georgia	2492.13	3174.95	2706.59	2964.48	3725.06	4142.87	4274.38	4429.65	3764.64	3865.79
Germany	41814.8	45699.2	41732.7	41785.6	46810.3	44065.2	46530.9	48042.6	41323.9	42161.3
Greece	28827.3	31997.3	29711	26917.8	25916.3	22242.7	21874.8	21761	18070.8	17890.6
Hungary	13907.5	15739.7	13029.9	13092.2	14118.1	12888.3	13667.7	14201.4	12483.9	12820.1
Iceland	68348.3	55575.3	40461.9	41676.4	46000	44333.9	47810.3	52473.1	50734.4	59764.7
India	1018.17	991.485	1090.32	1345.77	1461.67	1446.99	1452.2	1573.12	1596.47	1709.59
Indonesia	1975.17	2300.37	2400.37	3113.48	3634.28	3687.95	3620.66	3491.6	3336.11	3570.29
Iran	4857.37	5574.41	5619.12	6531.93	7729.34	7832.9	6036.19	5540.98	4862.3	5219.11
Iraq	3129.22	4521.03	3735.14	4502.75	5854.61	6651.12	6925.22	6703.07	4974.03	4609.6
Ireland	61359.6	61257.9	52104	48671.9	52224	49177.4	52060.5	55899.2	62544.6	64175.4
Israel	24889.2	29531.6	27709.1	30642.9	33689.8	32526	36291.2	37540	35691.3	37180.5
Italy	37698.8	40640.2	36976.8	35849.4	38334.7	34814.1	35370.3	35396.7	30171.7	30661.2
Japan	35275.2	39339.3	40855.2	44507.7	48168	48603.5	40454.4	38096.2	34474.1	38900.6
Jordan	2762.81	3385.61	3492.13	3679.19	3807.32	3870.75	3992.87	4066.94	4096.1	4087.94
Kazakhstan	6771.41	8513.56	7165.28	9070.65	11634.4	12387.2	13890.9	12806.6	10510	7714.69
Kenya	839.108	916.899	920.082	967.34	987.445	1155.02	1229.11	1335.06	1349.97	1455.36
Kuwait	45794	55572	37567.3	38497.6	48268.6	51264.1	48399.9	42996.4	29109.1	27359.2
Kyrgyzstan	721.769	966.394	871.224	880.038	1123.88	1177.97	1282.44	1279.77	1121.08	1077.6
Latvia	14044	16348.5	12219.4	11326.2	13702.7	13822.8	15061.9	15758.5	13658.1	14071
Lebanon	6014.27	7109.47	8480.95	8858.28	8734.19	8922.9	8721.25	8536.68	8452.44	8257.29
Libya	11308.6	14396	10297	12120.6	5602.55					
Lithuania	12297.9	14961.6	11837.4	11984.9	14357.7	14341.1	15712.8	16555	14252.4	14900.8
Luxembourg	106018	114294	103199	104965	115762	106749	113625	119225	101447	100739
Macedonia	4036.14	4793.29	4543.89	4542.9	5064.04	4698.69	5211.5	5469.22	4834.14	5237.15
Malaysia	7269.17	8513.63	7326.74	9071.36	10405.1	10779.5	10882.3	11183.7	9648.55	9508.24
Mexico	9330.34	9689.05	7748.12	8959.58	9834.47	9820.53	10298.9	10452.8	9152.87	8208.56
Moldova	1230.43	1695.97	1525.53	1631.54	1970.57	2046.54	2243.98	2244.76	1832.5	1900.23

Morocco	2494.35	2884.95	2861.55	2834.2	3039.92	2904.75	3111.76	3160.25	2864.09	2892.78
Netherlands	51241.3	56928.8	51900.3	50338.3	53540.6	49474.7	51574.5	52157.4	44746.3	45637.9
New Zealand	32509.7	31287.8	28200.9	33691.3	38426.6	39970.3	42889.9	44503.2	38201.6	39412.2
Nigeria	1136.83	1383.89	1097.66	2327.32	2527.94	2755.3	2996.96	3221.68	2655.16	2175.67
Norway	85170.9	97007.9	80067.2	87770.3	100711	101668	103059	97199.9	74498.1	70868.1
Oman	15805.1	22075	16784.3	19280.7	20986	22134.9	21268.8	20458.5	16627.4	14982.4
Pakistan	950.433	1039.31	1006.6	1040.14	1226.22	1261.21	1272.44	1316.98	1428.64	1443.63
Panama	6068.09	6973.93	7429.63	7937.26	9270.72	10589.8	11686	12593.7	13134	13680.2
Paraguay	2312.19	3059.99	2599.6	3225.59	3988.01	3855.54	4479.91	4712.82	4109.37	4077.74
Peru	3611.21	4208.88	4166.09	5022.49	5771.57	6387.79	6583.12	6491.05	6030.34	6049.23
Philippines	1672.69	1919.47	1825.34	2129.5	2352.52	2581.82	2760.29	2842.94	2878.34	2951.07
Poland	11260.3	14001.4	11542	12597.9	13890.7	13143.5	13780.2	14339.7	12564.5	12414.1
Portugal	22780.1	24815.6	23064	22538.7	23196.2	20577.4	21618.7	22077.5	19252.6	19838
Qatar	67005.6	82967.4	61478.2	70306.2	85948.1	88564.8	88304.9	86852.7	66346.5	59324.3
Romania	8214.19	10136.5	8220.11	8297.48	9200.28	8558.4	9585.27	10020.3	8978.39	9522.77
Russia	9101.25	11635.3	8562.81	10675	14351.2	15434.6	16007.1	14125.9	9329.29	8748.37
Saudi Arabia	16472.2	20037.8	16094.3	19259.6	23770.7	25303.1	24934.4	24575.4	20653.2	20028.6
Senegal	950.398	1101.2	1021.04	1002.53	1081.94	1038.08	1051.75	1052.13	910.775	952.768
Serbia	5458.12	6701.77	5821.31	5411.88	6423.29	5659.38	6353.83	6200.17	5237.26	5426.2
Singapore	39223.6	39721	38577.6	46569.7	53166.7	54431.2	56029.2	56336.1	53629.7	52962.5
Slovakia	16057.7	18650.4	16513	16600.6	18187.2	17274.6	18191.6	18629.8	16132.9	16529.5
Slovenia	23841.3	27501.8	24633.8	23437.5	24985.2	22532.4	23357.9	24202.4	20873.2	21650.2
South Africa	5994.2	5695.06	5831.12	7275.38	7976.47	7478.23	6822.16	6437.88	5744.32	5274.55
South Korea	23060.7	20430.6	18291.9	22087	24079.8	24358.8	25890	27811.4	27105.1	27538.8
Spain	32709.4	35579.3	32334	30736.6	31835.3	28563.9	29211.8	29623.2	25789.5	26616.5
Sudan	1115.7	1291.53	1226.88	1476.48	1666.86	1892.89	1955.66	2176.9	2513.88	2415.04
Sweden	53324.4	55746.8	46207.1	52076.3	59593.3	57134.1	60283.2	59180.2	50812.2	51844.8
Switzerland	63555.2	72487.8	69927.5	74605.7	88415.6	83538.2	85112.5	86605.6	82016	79887.5
Tajikistan	520.036	706.091	666.346	738.348	834.541	954.721	1040.21	1104.46	918.677	795.844

Thailand	3972.21	4378.69	4212.05	5075.3	5491.16	5859.92	6171.26	5941.84	5814.86	5910.62
Tunisia	3778.18	4310.09	4129.98	4140.15	4256.91	4137.55	4199.08	4270.31	3828.1	3688.65
Turkmenistan	2600.37	3904.47	4036.46	4439.2	5649.98	6675.26	7304.42	7962.37	6432.67	6389.33
UAE	42672.6	45758.9	33072.6	35049.1	40462.3	42112.2	43350.6	44449.7	39101.7	37622.2
Ukraine	3068.61	3891.04	2545.48	2965.14	3569.76	3855.42	4029.72	3104.66	2124.66	2185.73
UK	50134.3	46767.6	38262.2	38893	41412.3	41790.8	42724.1	46783.5	44305.6	40367
Uruguay	7009.7	9062.31	9415.17	11938.2	14166.5	15092.1	16881.2	16737.9	15524.8	15220.6
USA	48061.5	48401.4	47001.6	48373.9	49790.7	51450.1	52787	54598.6	56469	57638.2
Uzbekistan	830.408	1082.29	1213.27	1377.08	1564.97	1740.47	1907.55	2050.45	2137.58	2110.67
Venezuela	8318.8	11227.2	11536.1	13545.2	10741.6	12755	12237.2	15692.4		
Yemen	995.628	1203.72	1093.81	1309.23	1349.42	1420.84	1580.18	1647.03	1401.9	990.335

9.4. Distance

Country	Origin	Destination	Distance (km)
Afghanistan	Kabul	İstanbul	3581
Albania	Tirana	İstanbul	769
Algeria	Algiers	İstanbul	2287
Argentina	Buenos Aires	İstanbul	12259
Armenia	Yerevan	Artvin	569
Australia	Sydney	İstanbul	14963
Austria	Vienna	İstanbul	1278
Azerbaijan	Baku	Iğdır	928
Bahrain	Manama	İstanbul	2579
Bangladesh	Dhaka	İstanbul	5954
Belarus	Minsk	Antalya	1909
Belgium	Brussels	Antalya	2601
Bosnia	Sarajevo	İstanbul	923
Brazil	Sao Paulo	İstanbul	10595
Bulgaria	Sofia	Edirne	403
Canada	Toronto	İstanbul	8202
Chile	Santiago	İstanbul	13117
China	Beijing	İstanbul	7064
Colombia	Bogota	İstanbul	10760
Croatia	Zagreb	İstanbul	1177
Czech Republic	Prague	Antalya	1961
Denmark	Copenhagen	Antalya	2497
Dominican Republic	Santo Domingo	İstanbul	9398
Ecuador	Quayaquil	İstanbul	11757
Egypt	Cairo	İstanbul	1237

Estonia	Tallinn	Antalya	2545
Finland	Helsinki	Antalya	2623
France	Paris	İstanbul	2258
Georgia	Tbilisi	Artvin	493
Germany	Berlin	Antalya	2202
Greece	Athens	Edirne	883
Hungary	Budapest	Antalya	1519
Iceland	Reykjavik	Antalya	4586
India	Mumbai	İstanbul	4815
Indonesia	Jakarta	İstanbul	4815
Iran	Tehran	İstanbul	2035
Iraq	Baghdad	İstanbul	1608
Ireland	Dublin	İstanbul	2958
Israel	Tel Aviv	Antalya	653
Italy	Rome	İstanbul	1377
Japan	Tokyo	İstanbul	8955
Jordan	Amman	İstanbul	1184
Kazakhstan	Almaty	Antalya	3943
Kenya	Nairobi	İstanbul	4775
Kuwait	Kuwait City	İstanbul	2152
Kyrgyzstan	Bishkek	İstanbul	3734
Latvia	Riga	Antalya	2286
Lebanon	Beirut	İstanbul	979
Libya	Tripoli	İstanbul	1666
Lithuania	Vilnius	Antalya	2023
Luxembourg	Luxembourg City	Antalya	2426
Macedonia	Skopje	Edirne	564
Malaysia	Kuala Lumpur	İstanbul	8342
Mexico	Mexico City	İstanbul	11439

Moldova	Chisinau	İstanbul	668
Morocco	Casablanca	İstanbul	3317
Netherlands	Amsterdam	Antalya	2649
New Zealand	Auckland	İstanbul	17058
Nigeria	Lagos	İstanbul	4603
Norway	Oslo	Antalya	2930
Oman	Muscat	İstanbul	3354
Pakistan	Karachi	İstanbul	3949
Panama	Panama City	İstanbul	10876
Paraguay	Asuncion	İstanbul	11558
Peru	Lima	İstanbul	12187
Philippines	Manila	İstanbul	9124
Poland	Warsaw	Antalya	1868
Portugal	Lisbon	İstanbul	3241
Qatar	Doha	İstanbul	2720
Romania	Bucharest	Edirne	492
Russia	Moscow	Antalya	2163
Saudi Arabia	Riyadh	İstanbul	2445
Senegal	Dakar	İstanbul	5339
Serbia	Belgrade	Edirne	804
Singapore	Singapore	İstanbul	8655
Slovakia	Bratislava	Antalya	1673
Slovenia	Ljubljana	İstanbul	1294
South Africa	Cape Town	İstanbul	8411
South Korea	Seoul	İstanbul	7963
Spain	Madrid	İstanbul	2742
Sudan	Khartoum	İstanbul	2860
Sweden	Stockholm	Antalya	2658
Switzerland	Zurich	İstanbul	1772

Tajikistan	Dushanbe	İstanbul	3387
Thailand	Bangkok	İstanbul	7475
Tunisia	Tunis	İstanbul	1690
Turkmenistan	Ashgabat	İstanbul	2532
UAE	Dubai	İstanbul	2998
Ukraine	Kiev	Antalya	1509
UK	London	Muğla	2752
Uruguay	Montevideo	İstanbul	12117
USA	NYC	İstanbul	8079
Uzbekistan	Tashkent	İstanbul	3344
Venezuela	Caracas	İstanbul	9742
Yemen	Sana'a	İstanbul	3209

9.5. Weighted Distance

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	0.60924	0.57502	0.74318	0.86529	0.8762	0.98199	0.94255	0.93398	0.92042	0.91919
Albania	0.14222	0.15609	0.15393	0.13906	0.13528	0.1265	0.12761	0.12869	0.1166	0.12028
Algeria	5.33518	6.16239	5.21539	5.58991	6.24236	6.38425	6.23084	6.18612	5.07428	4.79573
Argentina	60.9202	69.8422	67.8423	78.7396	88.6903	89.3735	87.8985	81.6261	95.8795	88.1633
Armenia	0.09054	0.10456	0.08178	0.07989	0.07875	0.08068	0.08219	0.08357	0.08032	0.07931
Australia	220.79	248.825	230.573	259.282	283.935	307.33	304.582	276.297	269.274	237.643
Austria	8.58536	8.66525	8.49982	7.59367	7.51867	6.98683	7.13898	7.14439	6.53128	6.5848
Azerbaijan	0.53009	0.71436	0.68313	0.74435	0.83519	0.86349	0.89395	0.88338	0.65881	0.46307
Bahrain	0.96858	1.04485	0.9832	1.00545	1.01275	1.05892	1.09001	1.08934	1.07375	1.09416
Bangladesh	8.19236	8.59681	10.1408	10.4067	10.4518	10.6022	11.5995	13.0224	15.5363	17.3809
Belarus	1.49381	1.82782	1.5613	1.65625	1.60883	1.67436	1.87276	1.90341	1.44157	1.19318
Belgium	21.21	21.2559	20.9466	19.0693	18.7055	17.2919	17.5988	17.4752	15.837	16.0473
Bosnia	0.25167	0.27798	0.2702	0.24038	0.23484	0.21232	0.21794	0.2167	0.20013	0.20578
Brazil	255.827	283.118	293.544	354.834	378.254	348.76	340.298	329.195	255.613	250.905
Bulgaria	0.3118	0.34551	0.34752	0.30924	0.31577	0.29006	0.29187	0.28924	0.2706	0.28287
Canada	207.67	200.213	186.912	200.647	200.196	199.797	196.302	186.036	170.36	165.425
Chile	39.357	37.1295	37.5818	43.4625	45.1524	46.7864	47.4293	43.3095	42.5508	42.7206
China	433.679	511.828	599.929	653.399	729.969	807.471	881.488	936.774	1045.49	1043.02
Colombia	38.5725	41.3672	41.8147	46.8248	49.25	53.1116	53.1353	51.4818	41.9574	40.071
Croatia	1.22243	1.30718	1.22658	1.06476	0.99962	0.88774	0.88317	0.84994	0.77021	0.78699
Czech Republic	6.41333	7.28377	6.7198	6.16884	6.09994	5.43015	5.33368	5.15568	4.90064	5.0495
Denmark	13.785	13.9034	13.3316	12.1905	11.7218	10.9078	11.1435	11.1509	10.0634	10.1035
Dominican Republic	7.17434	7.15102	7.55618	7.68808	7.40583	7.60643	7.56408	7.75558	8.56108	8.86964
Ecuador	10.3647	11.4421	12.2165	12.3988	12.719	13.8033	14.5271	15.1305	15.6147	15.2859
Egypt	2.78954	3.17364	3.88529	4.10531	3.98379	4.61454	4.63674	4.78132	5.50489	5.42748
Estonia	0.97811	0.97024	0.83126	0.7521	0.80469	0.7831	0.83094	0.84435	0.76823	0.78308

Finland	11.5775	11.7276	10.9639	9.85492	9.79588	8.99104	9.19809	9.04614	8.15524	8.24801
France	103.929	104.018	101.094	90.616	88.208	80.8468	82.3698	81.3931	73.5014	73.397
Georgia	0.08668	0.0994	0.08822	0.087	0.09711	0.10432	0.10335	0.10297	0.09228	0.09346
Germany	130.916	130.199	125.09	114.085	112.915	104.204	107.327	108.382	99.4257	100.967
Greece	4.8606	4.9319	4.84292	4.00784	3.46784	2.8966	2.751	2.64782	2.30956	2.24326
Hungary	3.67151	3.78177	3.29695	3.01527	2.91821	2.59332	2.6678	2.69263	2.49669	2.51972
Iceland	1.68785	1.27476	0.98225	0.92164	0.91836	0.87069	0.92204	0.99668	1.02956	1.21213
India	99.9545	90.0564	105.949	120.941	119.786	117.506	116.121	123.985	134.6	143.711
Indonesia	38.2964	41.2177	45.975	55.1253	58.6738	59.0136	57.0701	54.2635	55.47	59.1821
Iran	12.3057	13.0212	14.0042	15.0283	16.2038	16.2727	12.3548	11.1854	10.5036	11.2412
Iraq	2.46898	3.33482	2.98414	3.37709	4.07592	4.68079	4.90085	4.7734	3.86384	3.63563
Ireland	13.7991	12.8188	11.6176	9.95428	9.64809	8.9096	9.19752	9.65848	11.4987	11.8877
Israel	2.01686	2.22091	2.2511	2.3129	2.33136	2.24348	2.48079	2.54786	2.61248	2.73558
Italy	52.4302	51.8739	50.0091	44.3669	42.7734	38.1128	38.105	37.4841	33.7498	33.7482
Japan	698.83	710.887	778.599	773.93	752.452	741.749	599.684	549.311	525.017	583.262
Jordan	0.35014	0.40993	0.46874	0.47438	0.46597	0.48911	0.51663	0.53664	0.59417	0.60341
Kazakhstan	7.14525	8.29092	7.5565	8.85077	10.3646	10.9512	12.1192	11.0448	9.725	7.13651
Kenya	2.63741	2.70081	2.93805	2.8959	2.73371	3.21432	3.41721	3.71182	4.07288	4.44016
Kuwait	4.26388	4.99819	3.78765	3.76594	4.52327	5.00197	4.86813	4.42764	3.29786	3.14583
Kyrgyzstan	0.2454	0.30243	0.29106	0.27143	0.31581	0.32933	0.35575	0.35278	0.33355	0.32252
Latvia	1.22089	1.28222	0.99428	0.82343	0.88044	0.85835	0.9001	0.90864	0.82588	0.83102
Lebanon	0.41585	0.45088	0.57725	0.57028	0.5354	0.57347	0.58512	0.59243	0.64768	0.64019
Libya	1.94404	2.2876	1.74519	1.88876	0.78888					
Lithuania	1.3894	1.52534	1.25884	1.13858	1.20023	1.15745	1.22115	1.24242	1.12033	1.13992
Luxembourg	2.13368	2.13499	2.07127	1.9573	1.98649	1.83603	1.94545	2.03567	1.87513	1.87533
Macedonia	0.08126	0.08807	0.08813	0.08044	0.08077	0.07339	0.07925	0.08107	0.07583	0.08105
Malaysia	27.9049	30.3401	28.0419	32.2547	33.9178	35.0257	35.0278	35.6772	33.0771	32.614
Mexico	206.296	198.504	170.145	182.305	182.821	181.245	187.503	187.906	176.307	157.892
Moldova	0.05081	0.06373	0.06039	0.05886	0.06395	0.06498	0.06928	0.06747	0.05819	0.05944

Morocco	4.53129	4.83511	5.12131	4.68806	4.58848	4.35236	4.60245	4.61938	4.48952	4.53095
Netherlands	38.4312	39.0795	37.7718	33.5927	32.3082	29.3213	29.8201	29.4787	26.8584	27.1448
New Zealand	40.4825	35.8242	34.3997	37.9105	39.214	40.1321	42.2123	43.3104	40.0581	41.5992
Nigeria	13.2419	15.0912	12.9657	25.757	25.863	28.3317	30.7884	33.1051	29.6193	24.5573
Norway	20.3107	21.3558	18.8272	19.0639	19.945	19.9622	19.923	18.5092	15.1541	14.3347
Oman	2.43959	3.21887	2.69734	2.9821	3.10944	3.43459	3.4389	3.4384	3.13289	2.9315
Pakistan	10.4005	10.5833	11.0363	10.6221	11.51	11.8319	11.8598	12.208	14.2914	14.5216
Panama	3.9395	4.20256	4.80703	4.76847	5.10162	5.80247	6.33664	6.76482	7.58412	7.9135
Paraguay	2.75565	3.37005	3.06004	3.51018	3.95879	3.79586	4.34848	4.51545	4.21791	4.17899
Peru	21.5202	23.15	24.4725	27.2601	28.565	31.3501	31.8516	30.9974	30.8443	30.8833
Philippines	23.5528	25.0441	25.5265	27.6108	27.9076	30.4691	32.2152	32.8489	35.7311	36.6782
Poland	13.8583	15.7128	13.6711	13.5738	13.4778	12.4787	12.7187	12.8813	11.9256	11.6089
Portugal	13.453	13.3807	13.1295	11.7102	10.8311	9.3637	9.51692	9.41525	8.64525	8.75273
Qatar	3.74728	4.94049	4.42112	5.16009	6.22742	6.78576	7.02094	7.09633	5.99014	5.46712
Romania	1.45863	1.61396	1.36903	1.25321	1.24451	1.12777	1.22409	1.2417	1.17084	1.21685
Russia	48.5874	56.607	43.953	50.0099	60.5583	63.8373	64.5371	56.4702	39.5178	36.5928
Saudi Arabia	17.5775	20.0261	17.4368	19.5811	22.3958	24.028	23.7117	23.3952	21.3154	20.8383
Senegal	1.04128	1.13061	1.13713	1.04821	1.04847	1.01414	1.02988	1.03371	0.97415	1.0336
Serbia	0.55985	0.62407	0.56947	0.48103	0.50981	0.4374	0.47536	0.44969	0.39964	0.40599
Singapore	26.9226	26.2158	27.6773	31.0248	32.5504	33.4182	34.0076	33.7399	34.3653	33.8879
Slovakia	2.49546	2.64477	2.47316	2.27027	2.24149	2.08681	2.13995	2.13658	1.95812	1.98006
Slovenia	1.07605	1.13348	1.08058	0.942	0.9057	0.80091	0.80871	0.81696	0.74553	0.76275
South Africa	43.47	38.051	41.5483	47.8606	47.8485	44.5125	40.0734	37.3617	35.7332	32.7641
South Korea	154.509	125.755	119.367	132.144	130.665	130.02	135.038	142.178	147.283	148.162
Spain	70.1065	70.6438	68.3172	59.518	55.6803	48.9165	48.5027	47.7637	43.9316	44.7285
Sudan	2.26877	2.45731	2.52641	2.8461	2.62766	2.60167	2.6771	2.97239	3.71677	3.60421
Sweden	22.4096	21.5265	18.9806	19.6818	20.4249	19.3034	19.9806	19.2954	17.7028	18.0287
Switzerland	14.6977	15.479	15.9477	15.6844	16.9166	15.8068	15.8467	15.8981	16.1008	15.6261
Tajikistan	0.21773	0.27546	0.28031	0.28974	0.30148	0.34521	0.37423	0.39577	0.3558	0.31043

Thailand	33.9699	34.321	34.9982	38.6592	37.8255	39.6816	40.8296	38.4432	39.918	40.1135
Tunisia	1.13645	1.19453	1.22056	1.12874	1.05649	1.01648	1.01526	1.01744	0.97558	0.93722
Turkmenistan	0.5542	0.76889	0.85066	0.86697	1.01007	1.18888	1.28911	1.39418	1.21247	1.20778
UAE	13.3639	14.9032	12.6335	13.1766	14.3561	15.0047	15.2034	15.2923	14.3543	13.7846
UK	146.226	125.348	108.987	101.859	98.3811	97.824	97.935	105.241	106.221	96.0742
Ukraine	3.72215	4.27985	2.94003	3.11189	3.3598	3.54191	3.59289	2.54863	1.83742	1.85563
Uruguay	4.90264	5.7979	6.37603	7.40094	7.93063	8.29442	9.05454	8.77382	8.63459	8.37427
USA	2021.52	1873.74	1936.05	1833.03	1710.81	1742.8	1751.54	1777.7	1958.22	1983.8
Uzbekistan	1.28948	1.55704	1.87236	1.99423	2.09524	2.31394	2.50575	2.66805	2.99258	2.96363
Venezuela	38.7869	48.5016	53.3967	58.0771	42.0735	49.5991	46.9458	59.4488		
Yemen	1.2011	1.36076	1.34029	1.50375	1.43311	1.51657	1.68454	1.75495	1.61969	1.15576

9.6. GDP

Country/Year	2007	2008	2009	2010	2011
Afghanistan	9843842455	10190529882	12486943506	15936800636	17930239400
Albania	10701011897	12881352688	12044212904	11926953259	12890867539
Algeria	1.34977E+11	1.71001E+11	1.37211E+11	1.61207E+11	2.00019E+11
Argentina	2.87531E+11	3.61558E+11	3.32976E+11	4.23627E+11	5.30163E+11
Armenia	9206301700	11662040714	8647936748	9260284938	10142111334
Australia	8.53765E+11	1.05533E+12	9.27168E+11	1.14288E+12	1.39056E+12
Austria	3.88691E+11	4.30294E+11	4.00172E+11	3.91893E+11	4.3112E+11
Azerbaijan	33050343783	48852482960	44291490421	52902703376	65951627200
Bahrain	21730000000	25710877660	22938218085	25713271277	28776595745
Bangladesh	79611888213	91631278239	1.02478E+11	1.15279E+11	1.28638E+11
Belarus	45275747861	60763483146	49209523810	57222490769	61757788945
Belgium	4.71821E+11	5.18626E+11	4.84553E+11	4.83548E+11	5.27008E+11
Bosnia	15776422673	19112739664	17613836210	17176781337	18644723861
Brazil	1.39708E+12	1.69582E+12	1.66702E+12	2.20887E+12	2.6162E+12
Bulgaria	44765733380	54409138498	51884481410	50610031136	57418391042
Canada	1.46498E+12	1.54913E+12	1.37115E+12	1.61346E+12	1.78865E+12
Chile	1.73606E+11	1.79638E+11	1.72389E+11	2.18538E+11	2.52252E+11
China	3.55218E+12	4.59821E+12	5.10995E+12	6.10062E+12	7.57255E+12
Colombia	2.07416E+11	2.43982E+11	2.33822E+11	2.87018E+11	3.35415E+11
Croatia	60093155533	70481451814	62703095751	59665427465	62236751773
Czech Republic	1.89227E+11	2.35719E+11	2.0618E+11	2.07478E+11	2.27948E+11
Denmark	3.19423E+11	3.53361E+11	3.21241E+11	3.21995E+11	3.44003E+11
Dominican Republic	44169678153	48288967303	48376555306	53954579004	57746684847
Ecuador	51007777000	61762635000	62519686000	69555367000	79276664000
Egypt	1.30479E+11	1.62818E+11	1.88982E+11	2.18888E+11	2.36002E+11
Estonia	22237061730	24194039256	19652492637	19490936349	23170239901

Finland	2.55385E+11	2.83742E+11	2.51499E+11	2.478E+11	2.73674E+11
France	2.66311E+12	2.92347E+12	2.69383E+12	2.64684E+12	2.86268E+12
Georgia	10172869680	12795044473	10766809099	11638536834	14434619982
Germany	3.43995E+12	3.75237E+12	3.41801E+12	3.41709E+12	3.7577E+12
Greece	3.18498E+11	3.54461E+11	3.3E+11	2.99362E+11	2.87798E+11
Hungary	1.39851E+11	1.57998E+11	1.30594E+11	1.30923E+11	1.40782E+11
Iceland	21295012099	17640375722	12887072301	13254818331	14674650435
India	1.20111E+12	1.18695E+12	1.32394E+12	1.65662E+12	1.82305E+12
Indonesia	4.60193E+11	5.43254E+11	5.74505E+11	7.55094E+11	8.92969E+11
Iran	3.49882E+11	4.06071E+11	4.14059E+11	4.8707E+11	5.835E+11
Iraq	88840050497	1.31614E+11	1.11661E+11	1.38517E+11	1.8575E+11
Ireland	2.69918E+11	2.7502E+11	2.36311E+11	2.21951E+11	2.39019E+11
Israel	1.78707E+11	2.1584E+11	2.07419E+11	2.3361E+11	2.61629E+11
Italy	2.20305E+12	2.39073E+12	2.18516E+12	2.12506E+12	2.27629E+12
Japan	4.51526E+12	5.03791E+12	5.23138E+12	5.7001E+12	6.15746E+12
Jordan	17110587447	21972004086	23820230000	26425379437	28840263380
Kazakhstan	1.0485E+11	1.33442E+11	1.15309E+11	1.48047E+11	1.92627E+11
Kenya	31958195182	35895153328	37021512049	39999659234	41953433591
Kuwait	1.14641E+11	1.47396E+11	1.059E+11	1.15419E+11	1.54028E+11
Kyrgyzstan	3802566171	5139957785	4690062255	4794357795	6197766119
Latvia	30901399261	35596016664	26169854045	23757368290	28223552825
Lebanon	24577114428	29227350570	35477118070	38419626628	40075674163
Libya	67516236338	87140405361	63028320702	74773444901	34699395524
Lithuania	39738180077	47850551149	37440673478	37120517694	43476878139
Luxembourg	50888134410	55849686539	51370543206	53212476812	60004630234
Macedonia	8336478142	9909548411	9401731496	9407168702	10494632699
Malaysia	1.93548E+11	2.30814E+11	2.02258E+11	2.55017E+11	2.97952E+11
Mexico	1.04347E+12	1.10128E+12	8.94949E+11	1.05113E+12	1.17119E+12
Moldova	4401154128	6054806101	5439422031	5811604052	7015206498

Morocco	79041294874	92507257784	92897320376	93216746662	1.0137E+11
Netherlands	8.3942E+11	9.36228E+11	8.57933E+11	8.3639E+11	8.93757E+11
New Zealand	1.37315E+11	1.3328E+11	1.21337E+11	1.46581E+11	1.68462E+11
Nigeria	1.66451E+11	2.08065E+11	1.69481E+11	3.69062E+11	4.11744E+11
Norway	4.01083E+11	4.62554E+11	3.86622E+11	4.29131E+11	4.98832E+11
Oman	42085305592	60905331599	48388296489	58641621847	67937307412
Pakistan	1.52386E+11	1.70078E+11	1.68153E+11	1.77407E+11	2.13587E+11
Panama	20958000000	24522200000	26593500000	28917200000	34373820500
Paraguay	13794910634	18504130753	15929902138	20030528043	25099681461
Peru	1.02171E+11	1.20551E+11	1.20823E+11	1.47529E+11	1.71762E+11
Philippines	1.4936E+11	1.74195E+11	1.68335E+11	1.99591E+11	2.24143E+11
Poland	4.2925E+11	5.33816E+11	4.40347E+11	4.79258E+11	5.28725E+11
Portugal	2.40169E+11	2.62008E+11	2.43746E+11	2.38303E+11	2.44895E+11
Qatar	79712087912	1.1527E+11	97798351648	1.25122E+11	1.67775E+11
Romania	1.71537E+11	2.08182E+11	1.67423E+11	1.67998E+11	1.85363E+11
Russia	1.29971E+12	1.66084E+12	1.22264E+12	1.52492E+12	2.05166E+12
Saudi Arabia	4.15965E+11	5.19797E+11	4.29098E+11	5.28207E+11	6.71239E+11
Senegal	11284603071	13439023281	12814961485	12948906289	14390776644
Serbia	40289556656	49259526053	42616653300	39460357731	46466728667
Singapore	1.79981E+11	1.92226E+11	1.92408E+11	2.36422E+11	2.75599E+11
Slovakia	86304245825	1.00325E+11	88945625174	89501012916	98181259740
Slovenia	48114688201	55589849128	50244793832	48013606745	51290792018
South Africa	2.99034E+11	2.871E+11	2.97217E+11	3.75298E+11	4.16878E+11
South Korea	1.12268E+12	1.00222E+12	9.01935E+11	1.0945E+12	1.20246E+12
Spain	1.47934E+12	1.63502E+12	1.4991E+12	1.43162E+12	1.48807E+12
Sudan	45898948564	54526580232	53150209168	65634109237	67327289320
Sweden	4.87816E+11	5.13966E+11	4.29657E+11	4.88378E+11	5.6311E+11
Switzerland	4.79913E+11	5.54363E+11	5.41507E+11	5.83783E+11	6.9958E+11
Tajikistan	3719497371	5161336170	4979481980	5642178580	6522732203

Thailand	2.62943E+11	2.91383E+11	2.8171E+11	3.41105E+11	3.70819E+11
Tunisia	38908069299	44856586316	43454935940	44050929160	45810626509
Turkmenistan	12664165103	19271523179	20214385965	22583157895	29233333333
UAE	2.57916E+11	3.15475E+11	2.53547E+11	2.8988E+11	3.50908E+11
UK	3.07436E+12	2.89056E+12	2.38283E+12	2.44117E+12	2.6197E+12
Ukraine	1.42719E+11	1.79992E+11	1.17228E+11	1.36013E+11	1.6316E+11
Uruguay	23410572622	30366213095	31660911290	40284481662	47962439293
USA	1.44776E+13	1.47186E+13	1.44187E+13	1.49644E+13	1.55179E+13
Uzbekistan	22311393928	29549438884	33689223673	39332770929	45915191189
Venezuela	2.30364E+11	3.15953E+11	3.29788E+11	3.93191E+11	3.16482E+11
Yemen	21656517484	26910851362	25130274124	30906749533	32726417878

Country/Year	2012	2013	2014	2015	2016
Afghanistan	20536542737	20264253974	20616104298	19215562179	19469022208
Albania	12319784787	12776277515	13228244357	11335264967	11863865978
Algeria	2.09059E+11	2.09755E+11	2.1381E+11	1.65874E+11	1.59049E+11
Argentina	5.45982E+11	5.52025E+11	5.2632E+11	5.84711E+11	5.45476E+11
Armenia	10619320049	11121465767	11609512940	10553337673	10572298342
Australia	1.53819E+12	1.56718E+12	1.4596E+12	1.34538E+12	1.20462E+12
Austria	4.09425E+11	4.30069E+11	4.41885E+11	3.82066E+11	3.908E+11
Azerbaijan	69684317719	74164435946	75244166773	53074370486	37847715736
Bahrain	30749308511	32539547872	33387712766	31125851064	32179069149
Bangladesh	1.33356E+11	1.4999E+11	1.72885E+11	1.95079E+11	2.21415E+11
Belarus	65685102555	75527984234	78813839984	56454734397	47407217531
Belgium	4.97884E+11	5.20925E+11	5.31076E+11	4.552E+11	4.67956E+11
Bosnia	17226849297	18178503835	18558343508	16209702864	16910277134
Brazil	2.46519E+12	2.47281E+12	2.45599E+12	1.80365E+12	1.79619E+12
Bulgaria	53903028252	55758744571	56732006512	50199117547	53237882473
Canada	1.82429E+12	1.84263E+12	1.79288E+12	1.55281E+12	1.52976E+12

Chile	2.67122E+11	2.78384E+11	2.6099E+11	2.42518E+11	2.47028E+11
China	8.56055E+12	9.60722E+12	1.04824E+13	1.10647E+13	1.11991E+13
Colombia	3.6966E+11	3.80192E+11	3.78196E+11	2.9152E+11	2.82463E+11
Croatia	56485301967	57769872075	57080369368	48921877448	50714957391
Czech Republic	2.07376E+11	2.09402E+11	2.07818E+11	1.8683E+11	1.95305E+11
Denmark	3.27149E+11	3.43584E+11	3.52994E+11	3.01298E+11	3.069E+11
Dominican Republic	60613645121	61965942057	65231032303	68102618092	71583553488
Ecuador	87924544000	95129659000	1.01726E+11	99290381000	98613972000
Egypt	2.79373E+11	2.88586E+11	3.0553E+11	3.32698E+11	3.32791E+11
Estonia	23043864510	25137153149	26224622451	22566956982	23337907619
Finland	2.56706E+11	2.6998E+11	2.72609E+11	2.32439E+11	2.38503E+11
France	2.68142E+12	2.80851E+12	2.84931E+12	2.43356E+12	2.46545E+12
Georgia	15846474596	16140047012	16509305828	13993546732	14378016729
Germany	3.54398E+12	3.75251E+12	3.89061E+12	3.37561E+12	3.4778E+12
Greece	2.45671E+11	2.39862E+11	2.3703E+11	1.95542E+11	1.92691E+11
Hungary	1.27857E+11	1.35216E+11	1.40118E+11	1.22879E+11	1.25817E+11
Iceland	14218575093	15479256845	17178962757	16783714958	20047413006
India	1.82764E+12	1.85672E+12	2.03539E+12	2.08987E+12	2.26379E+12
Indonesia	9.1787E+11	9.12524E+11	8.90815E+11	8.61256E+11	9.32259E+11
Iran	5.98853E+11	4.67415E+11	4.34475E+11	3.85874E+11	4.18977E+11
Iraq	2.18001E+11	2.34648E+11	2.34648E+11	1.7964E+11	1.71489E+11
Ireland	2.25572E+11	2.39389E+11	2.58099E+11	2.90617E+11	3.04819E+11
Israel	2.57297E+11	2.92489E+11	3.08417E+11	2.99096E+11	3.17745E+11
Italy	2.07282E+12	2.13049E+12	2.15173E+12	1.83235E+12	1.85891E+12
Japan	6.20321E+12	5.15572E+12	4.84873E+12	4.38308E+12	4.94016E+12
Jordan	30937277606	33593843662	35826925775	37517410282	38654727746
Kazakhstan	2.07999E+11	2.36635E+11	2.21416E+11	1.84388E+11	1.37278E+11
Kenya	50412754822	55097343448	61445345999	63767539357	70529014778
Kuwait	1.7407E+11	1.74161E+11	1.62632E+11	1.14567E+11	1.10876E+11

Kyrgyzstan	6605139933	7335027592	7468096567	6678178340	6551287938
Latvia	28119996053	30314363219	31419072948	27009231911	27572698482
Lebanon	43868565282	46014226808	47833413749	49459296463	49598825982
Libya					
Lithuania	42847900766	46473646002	48545251796	41402022148	42738875963
Luxembourg	56677961787	61739352212	66327344189	57784495265	58631324559
Macedonia	9745251126	10817712139	11362272838	10051659161	10899583155
Malaysia	3.14443E+11	3.23277E+11	3.38062E+11	2.96434E+11	2.96536E+11
Mexico	1.1866E+12	1.26198E+12	1.29846E+12	1.15226E+12	1.04692E+12
Moldova	7284686576	7985349731	7983271111	6512899540	6749515655
Morocco	98266306615	1.06826E+11	1.10081E+11	1.01187E+11	1.03606E+11
Netherlands	8.28947E+11	8.6668E+11	8.79635E+11	7.57999E+11	7.77228E+11
New Zealand	1.76193E+11	1.90521E+11	2.00696E+11	1.75563E+11	1.84969E+11
Nigeria	4.60954E+11	5.14966E+11	5.68499E+11	4.81066E+11	4.04653E+11
Norway	5.10229E+11	5.23502E+11	4.99339E+11	3.86663E+11	3.71076E+11
Oman	76689583355	78938585176	81034395059	69831770871	66293368010
Pakistan	2.24384E+11	2.31219E+11	2.44361E+11	2.70556E+11	2.78913E+11
Panama	39954761200	44856189500	49165773100	52132289700	55187700000
Paraguay	24595319574	28965906502	30881166852	27282581336	27424071383
Peru	1.92649E+11	2.01218E+11	2.0105E+11	1.89212E+11	1.92207E+11
Philippines	2.50092E+11	2.71836E+11	2.84585E+11	2.92774E+11	3.04905E+11
Poland	5.00284E+11	5.24201E+11	5.45076E+11	4.7728E+11	4.71364E+11
Portugal	2.16368E+11	2.26073E+11	2.2963E+11	1.9942E+11	2.04837E+11
Qatar	1.86834E+11	1.98728E+11	2.06225E+11	1.64641E+11	1.52452E+11
Romania	1.71665E+11	1.91549E+11	1.99493E+11	1.77911E+11	1.87592E+11
Russia	2.21026E+12	2.29713E+12	2.06366E+12	1.36586E+12	1.28316E+12
Saudi Arabia	7.35975E+11	7.46647E+11	7.5635E+11	6.51757E+11	6.46438E+11
Senegal	14225310519	14851057085	15304363138	13640668374	14683697631
Serbia	40742313861	45519650911	44210806366	37160332465	38299854688

Singapore	2.89162E+11	3.02511E+11	3.08143E+11	2.96841E+11	2.96976E+11
Slovakia	93413992956	98478349315	1.00948E+11	87501423882	89768598023
Slovenia	46352802766	48116256926	49904928335	43072415017	44708598649
South Africa	3.96333E+11	3.6681E+11	3.51119E+11	3.17611E+11	2.95456E+11
South Korea	1.22281E+12	1.3056E+12	1.41133E+12	1.38276E+12	1.41125E+12
Spain	1.33602E+12	1.36185E+12	1.37691E+12	1.19779E+12	1.23726E+12
Sudan	68125631150	72065940086	82151588419	97156119150	95584380032
Sweden	5.43881E+11	5.78742E+11	5.73818E+11	4.97918E+11	5.1446E+11
Switzerland	6.68044E+11	6.88504E+11	7.09183E+11	6.79289E+11	6.68851E+11
Tajikistan	7633049792	8506674783	9236309138	7853450374	6951657159
Thailand	3.9756E+11	4.20529E+11	4.06522E+11	3.99235E+11	4.07026E+11
Tunisia	45044112939	46251061734	47587913059	43156708809	42062549395
Turkmenistan	35164210526	39197543860	43524210526	35799628571	36179885714
UAE	3.74818E+11	3.90427E+11	4.03198E+11	3.57949E+11	3.48743E+11
UK	2.66209E+12	2.73982E+12	3.02283E+12	2.88557E+12	2.6479E+12
Ukraine	1.75781E+11	1.8331E+11	1.33503E+11	91030959455	93270479389
Uruguay	51264390121	57531233351	57236013078	53274304215	52419720714
USA	1.61553E+13	1.66915E+13	1.73931E+13	1.81207E+13	1.86245E+13
Uzbekistan	51821573338	57690453461	63067077179	66903804143	67220335570
Venezuela	3.81286E+11	3.71006E+11	4.82359E+11		
Yemen	35393148127	40415233436	43228583935	37733919936	27317605346

9.7. Population

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	2.7E+07	2.7E+07	2.8E+07	2.9E+07	3E+07	3.1E+07	3.2E+07	3.3E+07	3.4E+07	3.5E+07
Albania	2970017	2947314	2927519	2913021	2905195	2900401	2895092	2889104	2880703	2876101
Algeria	3.4E+07	3.5E+07	3.5E+07	3.6E+07	3.7E+07	3.8E+07	3.8E+07	3.9E+07	4E+07	4.1E+07
Argentina	4E+07	4E+07	4.1E+07	4.1E+07	4.2E+07	4.2E+07	4.3E+07	4.3E+07	4.3E+07	4.4E+07
Armenia	2933056	2908220	2888584	2877311	2875581	2881922	2893509	2906220	2916950	2924816
Australia	2.1E+07	2.1E+07	2.2E+07	2.2E+07	2.2E+07	2.3E+07	2.3E+07	2.3E+07	2.4E+07	2.4E+07
Austria	8295487	8321496	8343323	8363404	8391643	8429991	8479375	8541575	8633169	8747358
Azerbaijan	8581300	8763400	8947243	9054332	9173082	9295784	9416801	9535079	9649341	9762274
Bahrain	1035891	1114590	1185029	1240862	1278269	1300217	1315411	1336397	1371855	1425171
Bangladesh	1.5E+08	1.5E+08	1.5E+08	1.5E+08	1.5E+08	1.6E+08	1.6E+08	1.6E+08	1.6E+08	1.6E+08
Belarus	9560953	9527985	9506765	9490583	9473172	9464495	9465997	9474511	9489616	9507120
Belgium	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07
Bosnia	3774000	3763599	3746561	3722084	3688865	3648200	3604999	3566002	3535961	3516816
Brazil	1.9E+08	1.9E+08	1.9E+08	2E+08	2E+08	2E+08	2E+08	2E+08	2.1E+08	2.1E+08
Bulgaria	7545338	7492561	7444443	7395599	7348328	7305888	7265115	7223938	7177991	7127822
Canada	3.3E+07	3.3E+07	3.4E+07	3.4E+07	3.4E+07	3.5E+07	3.5E+07	3.6E+07	3.6E+07	3.6E+07
Chile	1.6E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.8E+07	1.8E+07	1.8E+07
China	1.3E+09	1.3E+09	1.3E+09	1.3E+09	1.3E+09	1.4E+09	1.4E+09	1.4E+09	1.4E+09	1.4E+09
Colombia	4.4E+07	4.5E+07	4.5E+07	4.6E+07	4.6E+07	4.7E+07	4.7E+07	4.8E+07	4.8E+07	4.9E+07
Croatia	4436000	4434508	4429078	4417781	4280622	4267558	4255689	4238389	4203604	4170600
Czech Republic	1E+07	1E+07	1E+07	1E+07	1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07
Denmark	5461438	5493621	5523095	5547683	5570572	5591572	5614932	5643475	5683483	5731118
Dominican Republic	9504353	9636520	9767758	9897985	1E+07	1E+07	1E+07	1E+07	1.1E+07	1.1E+07
Ecuador	1.4E+07	1.4E+07	1.5E+07	1.5E+07	1.5E+07	1.5E+07	1.6E+07	1.6E+07	1.6E+07	1.6E+07
Egypt	8E+07	8.1E+07	8.2E+07	8.4E+07	8.6E+07	8.8E+07	9E+07	9.2E+07	9.4E+07	9.6E+07

Estonia	1340680	1337090	1334515	1331475	1327439	1322696	1317997	1314545	1315407	1316481
Finland	5288720	5313399	5338871	5363352	5388272	5413971	5438972	5461512	5479531	5495096
France	6.4E+07	6.4E+07	6.5E+07	6.5E+07	6.5E+07	6.6E+07	6.6E+07	6.6E+07	6.7E+07	6.7E+07
Georgia	4082000	4030000	3978000	3926000	3875000	3825000	3776000	3727000	3717100	3719300
Germany	8.2E+07	8.2E+07	8.2E+07	8.2E+07	8E+07	8E+07	8.1E+07	8.1E+07	8.2E+07	8.3E+07
Greece	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07
Hungary	1E+07	1E+07	1E+07	1E+07	9971727	9920362	9893082	9866468	9843028	9817958
Iceland	311566	317414	318499	318041	319014	320716	323764	327386	330815	334252
India	1.2E+09	1.2E+09	1.2E+09	1.2E+09	1.2E+09	1.3E+09	1.3E+09	1.3E+09	1.3E+09	1.3E+09
Indonesia	2.3E+08	2.4E+08	2.4E+08	2.4E+08	2.5E+08	2.5E+08	2.5E+08	2.6E+08	2.6E+08	2.6E+08
Iran	7.2E+07	7.3E+07	7.4E+07	7.5E+07	7.5E+07	7.6E+07	7.7E+07	7.8E+07	7.9E+07	8E+07
Iraq	2.8E+07	2.9E+07	3E+07	3.1E+07	3.2E+07	3.3E+07	3.4E+07	3.5E+07	3.6E+07	3.7E+07
Ireland	4398942	4489544	4535375	4560155	4576794	4586897	4598294	4617225	4676835	4773095
Israel	7180100	7308800	7485600	7623600	7765800	7910500	8059500	8215700	8380100	8547100
Italy	5.8E+07	5.9E+07	5.9E+07	5.9E+07	5.9E+07	6E+07	6E+07	6.1E+07	6.1E+07	6.1E+07
Japan	1.3E+08	1.3E+08	1.3E+08	1.3E+08	1.3E+08	1.3E+08	1.3E+08	1.3E+08	1.3E+08	1.3E+08
Jordan	6193191	6489822	6821116	7182390	7574943	7992573	8413464	8809306	9159302	9455802
Kazakhstan	1.5E+07	1.6E+07	1.6E+07	1.6E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.8E+07	1.8E+07
Kenya	3.8E+07	3.9E+07	4E+07	4.1E+07	4.2E+07	4.4E+07	4.5E+07	4.6E+07	4.7E+07	4.8E+07
Kuwait	2503410	2652340	2818939	2998083	3191051	3395556	3598385	3782450	3935794	4052584
Kyrgyzstan	5268400	5318700	5383300	5447900	5514600	5607200	5719600	5835500	5956900	6082700
Latvia	2200325	2177322	2141669	2097555	2059709	2034319	2012647	1993782	1977527	1960424
Lebanon	4086466	4111047	4183156	4337141	4588368	4916404	5276102	5603279	5851479	6006668
Libya	5970362	6053078	6121053	6169140	6193501	6198258	6195970	6204108	6234955	6293253
Lithuania	3231294	3198231	3162916	3097282	3028115	2987773	2957689	2932367	2904910	2872298
Luxembourg	479993	488650	497783	506953	518347	530946	543360	556319	569604	582972
Macedonia	2065458	2067378	2069093	2070739	2072383	2074036	2075739	2077495	2079308	2081206
Malaysia	2.7E+07	2.7E+07	2.8E+07	2.8E+07	2.9E+07	2.9E+07	3E+07	3E+07	3.1E+07	3.1E+07
Mexico	1.1E+08	1.1E+08	1.2E+08	1.2E+08	1.2E+08	1.2E+08	1.2E+08	1.2E+08	1.3E+08	1.3E+08

Moldova	3576910	3570108	3565604	3562045	3559986	3559519	3558566	3556397	3554108	3552000
Morocco	3.1E+07	3.2E+07	3.2E+07	3.2E+07	3.3E+07	3.3E+07	3.4E+07	3.4E+07	3.5E+07	3.5E+07
Netherlands	1.6E+07	1.6E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07	1.7E+07
New Zealand	4223800	4259800	4302600	4350700	4384000	4408100	4442100	4509700	4595700	4692700
Nigeria	1.5E+08	1.5E+08	1.5E+08	1.6E+08	1.6E+08	1.7E+08	1.7E+08	1.8E+08	1.8E+08	1.9E+08
Norway	4709153	4768212	4828726	4889252	4953088	5018573	5079623	5137232	5188607	5232929
Oman	2662762	2759014	2882942	3041460	3237268	3464644	3711481	3960925	4199810	4424762
Pakistan	1.6E+08	1.6E+08	1.7E+08	1.7E+08	1.7E+08	1.8E+08	1.8E+08	1.9E+08	1.9E+08	1.9E+08
Panama	3453807	3516268	3579385	3643222	3707782	3772938	3838462	3903986	3969249	4034119
Paraguay	5966159	6047117	6127837	6209877	6293783	6379219	6465740	6552584	6639119	6725308
Peru	2.8E+07	2.9E+07	2.9E+07	2.9E+07	3E+07	3E+07	3.1E+07	3.1E+07	3.1E+07	3.2E+07
Philippines	8.9E+07	9.1E+07	9.2E+07	9.4E+07	9.5E+07	9.7E+07	9.8E+07	1E+08	1E+08	1E+08
Poland	3.8E+07	3.8E+07	3.8E+07	3.8E+07	3.8E+07	3.8E+07	3.8E+07	3.8E+07	3.8E+07	3.8E+07
Portugal	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1E+07	1E+07	1E+07	1E+07
Qatar	1189633	1389342	1590780	1779676	1952054	2109568	2250473	2374419	2481539	2569804
Romania	2.1E+07	2.1E+07	2E+07	2E+07	2E+07	2E+07	2E+07	2E+07	2E+07	2E+07
Russia	1.4E+08	1.4E+08	1.4E+08	1.4E+08	1.4E+08	1.4E+08	1.4E+08	1.4E+08	1.4E+08	1.4E+08
Saudi Arabia	2.5E+07	2.6E+07	2.7E+07	2.7E+07	2.8E+07	2.9E+07	3E+07	3.1E+07	3.2E+07	3.2E+07
Senegal	1.2E+07	1.2E+07	1.3E+07	1.3E+07	1.3E+07	1.4E+07	1.4E+07	1.5E+07	1.5E+07	1.5E+07
Serbia	7381579	7350222	7320807	7291436	7234099	7199077	7164132	7130576	7095383	7057412
Singapore	4588599	4839396	4987573	5076732	5183688	5312437	5399162	5469724	5535002	5607283
Slovakia	5374622	5379233	5386406	5391428	5398384	5407579	5413393	5418649	5423801	5428704
Slovenia	2018122	2021316	2039669	2048583	2052843	2057159	2059953	2061980	2063531	2064845
South Africa	4.9E+07	5E+07	5E+07	5.1E+07	5.2E+07	5.3E+07	5.3E+07	5.4E+07	5.5E+07	5.6E+07
South Korea	4.9E+07	4.9E+07	4.9E+07	5E+07	5E+07	5E+07	5E+07	5.1E+07	5.1E+07	5.1E+07
Spain	4.5E+07	4.6E+07	4.6E+07	4.7E+07	4.7E+07	4.7E+07	4.7E+07	4.6E+07	4.6E+07	4.6E+07
Sudan	3.2E+07	3.3E+07	3.4E+07	3.4E+07	3.5E+07	3.6E+07	3.7E+07	3.8E+07	3.9E+07	4E+07
Sweden	9148092	9219637	9298515	9378126	9449213	9519374	9600379	9696110	9799186	9903122
Switzerland	7551117	7647675	7743831	7824909	7912398	7996861	8089346	8188649	8282396	8372098

Tajikistan	7152385	7309728	7472819	7641630	7815949	7995062	8177809	8362745	8548651	8734951
Thailand	6.6E+07	6.7E+07	6.7E+07	6.7E+07	6.8E+07	6.8E+07	6.8E+07	6.8E+07	6.9E+07	6.9E+07
Tunisia	1E+07	1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07	1.1E+07
Turkmenistan	4870137	4935762	5007950	5087210	5174061	5267839	5366277	5466241	5565284	5662544
UAE	6044067	6894278	7666393	8270684	8672475	8900453	9006263	9070867	9154302	9269612
UK	6.1E+07	6.2E+07	6.2E+07	6.3E+07	6.3E+07	6.4E+07	6.4E+07	6.5E+07	6.5E+07	6.6E+07
Ukraine	4.7E+07	4.6E+07	4.6E+07	4.6E+07	4.6E+07	4.6E+07	4.5E+07	4.5E+07	4.5E+07	4.5E+07
Uruguay	3339741	3350824	3362755	3374415	3385624	3396777	3408005	3419546	3431552	3444006
USA	3E+08	3E+08	3.1E+08	3.1E+08	3.1E+08	3.1E+08	3.2E+08	3.2E+08	3.2E+08	3.2E+08
Uzbekistan	2.7E+07	2.7E+07	2.8E+07	2.9E+07	2.9E+07	3E+07	3E+07	3.1E+07	3.1E+07	3.2E+07
Venezuela	2.8E+07	2.8E+07	2.9E+07	2.9E+07	2.9E+07	3E+07	3E+07	3.1E+07	3.1E+07	3.2E+07
Yemen	2.2E+07	2.2E+07	2.3E+07	2.4E+07	2.4E+07	2.5E+07	2.6E+07	2.6E+07	2.7E+07	2.8E+07

9.8. Consumer Price Index

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	82.7748	108.067	99.1154	100	110.202	118.156	127.2	133.057	131.016	133.859
Albania	91.3478	94.4164	96.5696	100	103.45	105.552	107.597	109.353	111.442	112.871
Algeria	86.7944	91.0152	96.2343	100	104.522	113.819	117.522	120.949	126.737	134.845
Argentina	78.06	83.71	90.16	100	109.53	121.4	134.67	113.38	120.6	130.06
Armenia	82.0485	89.3918	92.4372	100	107.651	110.402	116.799	120.28	124.763	123.177
Australia	91.5122	95.4954	97.2335	100	103.304	105.125	107.7	110.38	112.045	113.476
Austria	94.6792	97.724	98.2188	100	103.267	105.834	107.951	109.684	110.668	111.654
Azerbaijan	77.2641	93.3285	94.6361	100	107.85	108.944	111.539	113.083	117.801	122.725
Bahrain	92.1592	95.4087	98.0759	100	99.6356	102.38	105.764	108.568	110.562	113.656
Bangladesh	80.5553	87.7263	92.4841	100	110.705	117.589	126.443	135.283	143.663	151.584
Belarus	71.5625	82.1809	92.8197	100	153.229	243.97	288.647	340.948	387.094	432.913
Belgium	93.7022	97.9115	97.8577	100	103.531	106.47	107.654	108.02	108.623	110.765
Bosnia	91.4583	98.2417	97.8583	100	103.642	105.8	105.708	104.742	103.85	102.55
Brazil	85.9033	90.7681	95.2034	100	106.636	112.397	119.367	126.926	138.384	150.478
Bulgaria	84.5612	95.0035	97.6191	100	104.22	107.299	108.254	106.719	106.607	105.756
Canada	95.6926	97.9608	98.2541	100	102.912	104.472	105.452	107.463	108.672	110.225
Chile	90.38	98.26	98.6096	100	103.34	106.447	108.354	113.117	118.036	122.506
China	92.0837	97.4641	96.7813	100	105.411	108.197	111.04	113.262	114.889	117.187
Colombia	87.6931	93.829	97.7725	100	103.412	106.697	108.855	111.988	117.593	126.433
Croatia	91.1417	96.6804	98.98	100	102.273	105.762	108.107	107.874	107.373	106.192
Czech Republic	91.7633	97.5912	98.6109	100	101.936	105.299	106.81	107.17	107.54	108.227
Denmark	93.3025	96.4743	97.7539	100	102.759	105.223	106.053	106.651	107.133	107.401
Dominican Republic	83.7907	92.7099	94.0469	100	108.46	112.467	117.9	121.436	122.452	124.429
Ecuador	84.7129	91.8295	96.566	100	104.475	109.803	112.811	116.841	121.48	123.575
Egypt	67.9664	80.4157	89.8754	100	110.054	117.888	128.995	142.082	156.798	178.459
Estonia	88.0644	97.1928	97.1104	100	104.978	109.108	112.151	111.988	111.477	111.643

Finland	94.9432	98.8035	98.8041	100	103.417	106.321	107.893	109.016	108.79	109.179
France	95.7134	98.4067	98.4934	100	102.117	104.115	105.014	105.547	105.587	105.78
Georgia	83.4335	91.7764	93.3618	100	108.543	107.519	106.968	110.251	114.665	117.113
Germany	96.0747	98.5999	98.9082	100	102.075	104.125	105.692	106.651	106.901	107.417
Greece	90.5951	94.3573	95.4991	100	103.33	104.881	103.915	102.552	100.771	99.9393
Hungary	86.2619	91.4947	95.3458	100	103.921	109.811	111.701	111.452	111.374	111.82
Iceland	75.1805	84.7121	94.8824	100	103.99	109.393	113.643	115.955	117.847	119.844
India	74.3246	80.5321	89.2919	100	108.858	118.995	131.975	140.75	147.657	154.953
Indonesia	82.6658	90.7477	95.1159	99.9979	105.355	109.864	116.91	124.386	132.301	136.966
Iran	63.7167	79.9962	90.7959	100	120.628	153.629	213.954	250.829	285.207	309.649
Iraq	80.7286	90.9511	97.2028	100	105.801	112.244	114.353	116.91	118.539	118.839
Ireland	101.573	105.69	100.955	100	102.579	104.315	104.84	105.046	104.737	104.737
Israel	90.1016	94.244	97.3777	100	103.459	105.226	106.831	107.34	106.66	106.079
Italy	94.5588	97.7502	98.4835	100	102.741	105.866	107.158	107.416	107.458	107.325
Japan	100.717	102.107	100.725	100	99.7324	99.6806	100.026	102.789	103.6	103.479
Jordan	83.4225	95.8757	95.2255	100	104.158	108.867	114.125	117.425	116.4	115.483
Kazakhstan	74.2628	87.0003	93.3569	100	108.349	113.889	120.537	128.635	137.184	157.09
Kenya	69.7547	88.0582	96.1896	100	114.022	124.715	131.846	140.914	150.19	159.648
Kuwait	82.7256	91.4802	95.6971	100	104.905	108.262	111.188	114.422	118.165	121.945
Kyrgyzstan	69.5793	86.6431	92.6203	100	116.496	119.626	127.529	137.138	146.056	146.672
Latvia	84.632	97.6912	101.082	100	104.401	106.71	106.71	107.359	107.576	107.72
Lebanon	91.65	95.0346	96.1632	100	104.919	111.882	118.084	118.97	114.51	113.577
Libya	86.0278	94.9409	97.2764	100	115.518	122.519	125.711			
Lithuania	85.1833	94.4917	98.698	100	104.13	107.348	108.472	108.585	107.625	108.599
Luxembourg	94.2134	97.4169	97.7771	100	103.41	106.165	108.006	108.686	109.202	109.528
Macedonia	91.614	99.2475	98.5141	100	103.905	107.352	110.342	110.031	109.701	109.438
Malaysia	92.7047	97.7485	98.3187	100	103.2	104.9	107.1	110.5	112.8	115.2
Mexico	86.734	91.1791	96.0092	100	103.407	107.659	111.757	116.248	119.411	122.78
Moldova	82.5584	93.206	93.1513	100	107.611	112.603	117.83	123.826	135.811	144.481

Morocco	94.5419	98.0469	99.0223	100	100.922	102.213	104.142	104.596	106.225	107.962
Netherlands	95.2119	97.5794	98.7405	100	102.341	104.854	107.483	108.532	109.183	109.529
New Zealand	92.0792	95.7246	97.7498	100	104.433	105.356	106.728	107.696	108.056	109.226
Nigeria	70.6582	78.8389	87.9351	100	110.841	124.382	134.925	145.796	158.943	183.893
Norway	92.1165	95.5858	97.657	100	101.301	102.019	104.194	106.304	108.615	112.471
Oman	83.1713	93.2274	96.896	100	104.07	107.099	108.433	109.533	109.604	110.811
Pakistan	64.235	77.2658	87.8109	100	111.917	122.756	132.195	141.702	145.301	150.753
Panama	86.7549	94.3535	96.6265	100	105.876	111.909	116.416	119.486	119.636	120.529
Paraguay	84.5552	93.1414	95.5556	100	108.254	112.233	115.245	121.041	124.828	129.93
Peru	90.4517	95.6851	98.4947	100	103.371	107.148	110.165	113.719	117.763	121.997
Philippines	85.3942	92.4481	96.3485	100	104.647	107.967	111.203	115.768	117.427	119.502
Poland	89.8674	93.7761	97.3639	100	104.258	107.967	109.083	109.2	108.118	107.458
Portugal	96.9367	99.4477	98.6168	100	103.653	106.528	106.82	106.523	107.043	107.693
Qatar	93.6326	107.724	102.486	100	101.916	103.819	107.07	110.37	112.449	115.683
Romania	82.7717	89.2679	94.2558	100	105.788	109.315	113.671	114.886	114.205	112.448
Russia	73.4487	83.8139	93.5871	100	108.435	113.951	121.633	131.157	151.521	162.203
Saudi Arabia	82.2346	90.3502	94.9279	100	105.824	108.878	112.695	115.705	118.232	122.398
Senegal	95.5453	101.058	98.7862	100	103.403	104.873	105.606	104.465	104.617	105.49
Serbia	77.519	87.1398	94.2129	100	111.137	119.284	128.462	131.137	132.963	134.456
Singapore	90.7753	96.6926	97.2763	100	105.253	110.019	112.636	113.774	113.205	112.636
Slovakia	93.1925	97.4777	99.0521	100	103.919	107.667	109.175	109.091	108.737	108.171
Slovenia	92.1508	97.359	98.1923	100	101.811	104.456	106.295	106.507	105.956	105.895
South Africa	80.2722	89.5328	95.9164	100	105	110.937	117.317	124.435	130.145	138.378
South Korea	90.3174	94.5386	97.1447	100	104.026	106.301	107.685	109.057	109.828	110.894
Spain	94.6577	98.5157	98.2319	100	103.196	105.72	107.209	107.048	106.512	106.296
Sudan	69.4407	79.3753	88.3038	100	122.112	167.774	218.037	298.509	348.992	410.94
Sweden	96.0454	99.3465	98.8553	100	102.961	103.876	103.83	103.643	103.595	104.614
Switzerland	97.4218	99.7859	99.3063	100	100.231	99.5372	99.3209	99.3078	98.1718	97.7451
Tajikistan	73.2756	88.2755	93.9677	100	112.432	118.988	124.948	132.576	140.152	148.568

Thailand	92.616	97.6807	96.8546	100	103.81	106.945	109.282	111.353	110.351	110.559
Tunisia	88.1711	92.5097	95.7705	100	103.544	108.864	115.177	120.864	126.734	131.438
Turkmenistan	85.88	98.37	95.74	100	105.27	110.87	114.86	125.54	134.83	139.59
UAE	86.954	97.6063	99.1287	100	100.877	101.547	102.663	105.072	109.347	111.116
UK	91.461	94.766	96.8188	100	104.484	107.432	110.177	111.786	111.842	112.559
Ukraine	62.9926	78.8868	91.4256	100	107.96	108.56	108.26	121.455	180.633	205.732
Uruguay	81.1487	87.5277	93.7415	100	108.094	116.847	126.867	138.129	150.1	164.569
USA	95.087	98.7375	98.3864	100	103.157	105.292	106.834	108.567	108.696	110.067
Uzbekistan	69.87	79.53	89.36	100	113.61	125.89	139.49	152.38	165.22	178.24
Venezuela	52.86	61.3867	78.0107	100	126.09	152.656	214.695	348.168	772.02	2740.27
Yemen	71.7234	85.3338	89.9484	100	119.544	131.361	145.769	157.583	166.69	206.54

9.9. Exchange Rate

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	38.3459	38.6084	32.4686	30.9096	27.9094	28.3527	29.0884	26.1578	22.4791	22.4712
Albania	69.4034	64.4589	61.2778	69.1596	60.2374	60.2364	55.505	48.1961	46.309	41.1044
Algeria	53.1819	49.621	46.8705	49.4967	43.5462	43.1715	41.6902	36.8186	37.0188	36.2378
Argentina	2.37591	2.41576	2.39368	2.59261	2.45388	2.52613	2.86766	3.6898	3.39454	4.88659
Armenia	262.546	235.086	234.382	248.635	222.395	223.699	215.166	190.044	175.705	159.095
Australia	0.91722	0.91599	0.82724	0.7254	0.5788	0.53775	0.5441	0.5069	0.48937	0.44542
Austria	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Azerbaijan	0.65861	0.63128	0.51858	0.53409	0.47147	0.43744	0.4121	0.35839	0.37668	0.52836
Bahrain	0.28858	0.28889	0.24259	0.25019	0.22448	0.20935	0.1975	0.1718	0.13823	0.1245
Bangladesh	52.8615	52.7062	44.5425	46.3448	44.2713	45.5805	41.0256	35.4763	28.6569	25.9817
Belarus	0.16471	0.16415	0.1802	0.19819	0.297	0.46419	0.46645	0.46716	0.58551	0.65877
Belgium	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Bosnia	1.09676	1.02587	0.90834	0.98263	0.83998	0.84756	0.77376	0.67358	0.64834	0.58545
Brazil	1.49437	1.40894	1.28999	1.17059	0.99873	1.08745	1.13254	1.07512	1.22312	1.15601
Bulgaria	1.0968	1.02735	0.90757	0.98306	0.8397	0.84747	0.77403	0.67359	0.64867	0.58542
Canada	0.82437	0.81984	0.7375	0.68547	0.59078	0.55634	0.54093	0.50541	0.47026	0.43885
Chile	400.991	401.423	361.854	339.521	288.765	270.864	260.154	260.606	240.486	224.148
China	5.83878	5.33887	4.40748	4.50496	3.85769	3.51466	3.25447	2.80709	2.28951	2.20006
Colombia	1595.09	1511.85	1392.46	1263.31	1103.4	1000.5	981.624	914.664	1008.04	1011.25
Croatia	4.11728	3.79175	3.40909	3.65839	3.19046	3.2574	2.99663	2.62648	2.52143	2.25354
Czech Republic	15.5754	13.1167	12.299	12.708	10.565	10.9006	10.2799	9.48462	9.04363	8.09233
Denmark	4.17804	3.91705	3.45871	3.74228	3.20529	3.22521	2.9501	2.56448	2.47349	2.22895
Dominican Republic	25.5669	26.7887	23.3	24.8239	22.8254	21.9018	21.9607	19.9018	16.5631	15.2569
Ecuador	0.7675	0.76833	0.64518	0.6654	0.59703	0.55679	0.52527	0.45693	0.36765	0.33111
Egypt	4.3252	4.17396	3.57722	3.74086	3.54208	3.37197	3.6088	3.23394	2.82766	3.31952
Estonia	8.77549	8.21688	7.26305	7.85631	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934

Finland	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
France	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Georgia	1.2821	1.14542	1.07776	1.18598	1.00689	0.91941	0.87371	0.80678	0.83431	0.78365
Germany	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Greece	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Hungary	140.933	132.24	130.546	138.367	120.036	125.336	117.501	106.282	102.695	93.2155
Iceland	49.1622	67.5731	79.7688	81.3401	69.2282	69.6452	64.1775	53.3539	48.4994	40.002
India	31.735	33.4264	31.23	30.4261	27.8637	29.7535	30.7799	27.8859	23.5852	22.2491
Indonesia	7015.72	7452.02	6703.36	6048.8	5236.22	5226.41	5495.02	5421.51	4922.56	4406.53
Iran	7123.29	7244.23	6364.23	6823.16	6338.27	6779.25	9672.63	11853.4	10666	10236.2
Iraq	962.881	916.683	754.858	778.522	698.526	649.313	612.47	532.775	429.165	391.373
Ireland	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Israel	3.15296	2.75679	2.53706	2.48793	2.13625	2.14695	1.89664	1.63484	1.42898	1.27165
Italy	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Japan	90.3759	79.4143	60.3694	58.409	47.6473	44.4267	51.2645	48.4088	44.5013	36.0225
Jordan	0.54416	0.54526	0.45808	0.47244	0.42389	0.39532	0.37294	0.32442	0.26103	0.23509
Kazakhstan	94.0604	92.4296	95.1616	98.0505	87.5372	83.0247	79.9095	81.8772	81.5175	113.293
Kenya	51.6663	53.1496	49.9058	52.722	53.0228	47.0655	45.2381	40.1738	36.0949	33.6092
Kuwait	0.21813	0.20655	0.18567	0.19071	0.16477	0.15587	0.14896	0.13003	0.11061	0.10005
Kyrgyzstan	28.6402	28.1014	27.6808	30.5848	27.5493	26.1717	25.4433	24.5159	23.6992	23.1493
Latvia	0.39434	0.36943	0.32617	0.35298	0.29925	0.3045	0.27808	0.3444	0.33149	0.29934
Lebanon	1157.01	1158.26	972.606	1003.1	900.024	839.365	791.851	688.815	554.226	499.15
Libya	0.96908	0.9401	0.80875	0.84293	0.73086	0.70248	0.66799	0.58139	0.5078	0.46037
Lithuania	1.93696	1.81101	1.60264	1.73426	1.48129	1.49571	1.36624	1.18814	0.33149	0.29934
Luxembourg	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Macedonia	34.3302	32.1683	28.4527	30.9315	26.4072	26.6649	24.3703	21.2183	20.418	18.4534
Malaysia	2.63834	2.56303	2.27393	2.14332	1.82692	1.71982	1.65509	1.49545	1.43584	1.37355
Mexico	8.38739	8.55131	8.7186	8.40804	7.41711	7.33266	6.7088	6.07365	5.82655	6.17988
Moldova	9.31741	7.98453	7.16765	8.23054	7.00832	6.74356	6.6115	6.41323	6.91854	6.597

Morocco	6.28762	5.95482	5.19826	5.6008	4.82991	4.80425	4.41519	3.84107	3.58982	3.24736
Netherlands	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
New Zealand	1.04432	1.09313	1.03285	0.92347	0.75573	0.68724	0.64052	0.55079	0.5272	0.47565
Nigeria	96.5578	91.0826	96.0681	100.009	91.8602	87.6945	82.6315	72.4467	70.75	83.9341
Norway	4.49883	4.33339	4.05709	4.02181	3.34613	3.23914	3.08598	2.87939	2.96476	2.78133
Oman	0.2951	0.29542	0.24807	0.25585	0.22956	0.21409	0.20197	0.17569	0.14136	0.12731
Pakistan	46.6168	54.0967	52.7194	56.6882	51.5497	52.0018	53.383	46.1952	37.7827	34.6902
Panama	0.7675	0.76833	0.64518	0.6654	0.59703	0.55679	0.52527	0.45693	0.36765	0.33111
Paraguay	3862.61	3352.42	3203.56	3150.99	2502.41	2463.76	2269.54	2038.89	1913.56	1877.57
Peru	2.40078	2.24691	1.94296	1.87985	1.64428	1.46859	1.41924	1.29723	1.17075	1.11752
Philippines	35.4189	34.055	30.7619	30.0161	25.8593	23.5127	22.2959	20.2853	16.7289	15.7253
Poland	2.1244	1.8511	2.01305	2.00639	1.76891	1.81322	1.66019	1.44139	1.38584	1.3055
Portugal	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Qatar	2.7937	2.79673	2.34845	2.42207	2.17319	2.02672	1.912	1.66321	1.33823	1.20524
Romania	1.87136	1.93532	1.96736	2.11458	1.82011	1.93107	1.74807	1.53032	1.47267	1.34404
Russia	19.6333	19.0952	20.4782	20.2069	17.5422	17.1714	16.7232	17.536	22.4035	22.203
Saudi Arabia	2.87621	2.88124	2.41942	2.49526	2.23887	2.08797	1.96978	1.71347	1.37867	1.24167
Senegal	367.837	344.063	304.644	329.559	281.719	284.258	259.506	225.911	217.521	196.375
Serbia	44.8631	42.8141	43.6015	51.7211	43.7823	48.9829	44.7317	40.3946	40.0041	36.8453
Singapore	1.1567	1.08708	0.93842	0.90728	0.75093	0.69581	0.65728	0.57895	0.50545	0.45745
Slovakia	18.9529	16.4126	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Slovenia	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
South Africa	5.40732	6.34736	5.46703	4.87156	4.33512	4.57125	5.07155	4.95885	4.69077	4.87051
South Korea	713.205	846.737	823.847	769.246	661.685	627.211	575.098	481.124	415.865	384.232
Spain	0.56076	0.52452	0.46443	0.50241	0.42948	0.43335	0.39561	0.3444	0.33149	0.29934
Sudan	1.54736	1.60594	1.4849	1.53442	1.59205	1.9894	2.4986	2.62132	2.21534	2.05583
Sweden	5.18736	5.06415	4.93808	4.79591	3.87685	3.77228	3.42162	3.13486	3.10103	2.83497
Switzerland	0.92128	0.83217	0.70205	0.69395	0.53019	0.5221	0.48688	0.41861	0.35382	0.32627
Tajikistan	2.64211	2.63593	2.67278	2.91378	2.75242	2.63792	2.50253	2.2561	2.26584	2.59448

Thailand	26.4927	25.5957	22.1204	21.0838	18.2045	17.3068	16.1396	14.8409	12.591	11.687
Tunisia	0.98344	0.94669	0.87117	0.95246	0.84049	0.86965	0.85339	0.77571	0.72118	0.71124
Turkmenistan	3991.08	3995.4	9177.79	9481.99	8507.69	7934.29	7485.15	6511.18	5756.65	5815.9
UAE	2.81865	2.8217	2.36942	2.44369	2.1926	2.04482	1.92907	1.67806	1.35018	1.21601
UK	0.38357	0.41795	0.41415	0.43064	0.37263	0.35248	0.336	0.27769	0.24064	0.24523
Ukraine	3.87588	4.04697	5.02674	5.2804	4.75688	4.44935	4.19852	5.43131	8.03111	8.46033
Uruguay	18.014	16.096	14.5604	13.3475	11.5312	11.3088	10.7585	10.6217	10.0468	9.98717
USA	0.7675	0.76833	0.64518	0.6654	0.59703	0.55679	0.52527	0.45693	0.36765	0.33111
Uzbekistan	987.075	1012.39	944.535	1056.21	1024.6	1054.13	1108.43	1069.86	950.201	992.821
Venezuela	1.64782	1.64961	1.3852	1.71811	2.56085	2.38825	3.17684	2.87141	2.31036	3.06521
Yemen	152.697	153.485	130.872	146.116	127.645	119.349	112.876	98.1886	79.0034	71.1525

9.10. Relative Price

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	36.3621	30.9714	30.1736	30.9096	26.9648	27.8206	28.4997	26.6698	25.0616	26.4273
Albania	59.6364	59.1843	58.4477	69.1596	61.9968	66.164	64.2896	59.7913	60.6977	57.3295
Algeria	48.0952	47.2632	44.8615	49.4967	44.3586	43.9757	44.2104	41.2972	42.6653	42.3059
Argentina	2.38908	2.50177	2.44544	2.59261	2.38537	2.4125	2.65379	4.41492	4.11139	5.91474
Armenia	251.167	227.982	233.552	248.635	219.958	234.918	229.586	214.346	205.709	203.33
Australia	0.78672	0.83153	0.78365	0.7254	0.59655	0.59307	0.62961	0.623	0.63797	0.61793
Austria	0.4649	0.4653	0.43554	0.50241	0.44281	0.47472	0.45673	0.42596	0.43753	0.42204
Azerbaijan	0.66908	0.58638	0.50474	0.53409	0.46544	0.46553	0.46045	0.42994	0.46706	0.67775
Bahrain	0.24579	0.26249	0.22783	0.25019	0.23989	0.23708	0.23273	0.21468	0.18263	0.17244
Bangladesh	51.5079	52.0839	44.3621	46.3448	42.5785	44.941	40.4362	35.5756	29.1366	26.9829
Belarus	0.18066	0.17315	0.17882	0.19819	0.20637	0.22059	0.20139	0.18588	0.22094	0.23955
Belgium	0.46974	0.46441	0.43715	0.50241	0.44168	0.47189	0.45799	0.43253	0.44576	0.42543
Bosnia	0.94128	0.90525	0.85498	0.98263	0.86292	0.92878	0.91223	0.87243	0.91191	0.89872
Brazil	1.36545	1.34565	1.24807	1.17059	0.99719	1.12173	1.18243	1.14912	1.29104	1.20938
Bulgaria	1.01808	0.93745	0.85634	0.98306	0.85784	0.9157	0.89109	0.85627	0.88878	0.87143
Canada	0.6762	0.72552	0.69138	0.68547	0.61122	0.61741	0.63928	0.63803	0.63208	0.62678
Chile	348.25	354.158	338.002	339.521	297.515	295.016	299.222	312.547	297.598	288.04
China	4.97701	4.74871	4.19472	4.50496	3.89652	3.76615	3.65266	3.36225	2.91084	2.95548
Colombia	1427.74	1396.83	1311.81	1263.31	1136.05	1087.16	1123.84	1108.02	1252.14	1259.14
Croatia	3.54587	3.39995	3.17245	3.65839	3.32145	3.57083	3.45454	3.30304	3.4301	3.34077
Czech Republic	13.3229	11.6516	11.4882	12.708	11.0351	12.002	11.9946	12.0061	12.2837	11.7709
Denmark	3.51486	3.51981	3.259	3.74228	3.32111	3.55367	3.46676	3.26204	3.37241	3.26711
Dominican Republic	23.9503	25.0494	22.82	24.8239	22.407	22.5779	23.2135	22.2332	19.7574	19.3028
Ecuador	0.71114	0.72533	0.6154	0.6654	0.60845	0.5879	0.58029	0.53052	0.44206	0.42181
Egypt	4.99506	4.49965	3.66615	3.74086	3.42679	3.31623	3.48659	3.0878	2.63415	2.92826
Estonia	7.82167	7.32899	6.88902	7.85631	0.43559	0.46048	0.43962	0.4172	0.43435	0.42209

Finland	0.4636	0.46022	0.43296	0.50241	0.44216	0.47255	0.45697	0.42857	0.44508	0.43161
France	0.45987	0.46207	0.43432	0.50241	0.44779	0.48256	0.4695	0.44266	0.45858	0.44548
Georgia	1.20618	1.08195	1.0633	1.18598	0.98768	0.99141	1.01795	0.99272	1.06281	1.05339
Germany	0.45814	0.46117	0.4325	0.50241	0.44798	0.48251	0.46649	0.43808	0.45295	0.43869
Greece	0.48585	0.4819	0.44794	0.50241	0.44254	0.47904	0.47446	0.45559	0.4805	0.47152
Hungary	128.24	125.296	126.115	138.367	122.983	132.331	131.098	129.368	134.686	131.232
Iceland	51.3281	69.1513	77.4375	81.3401	70.8801	73.8126	70.3804	62.4213	60.1137	52.546
India	33.5147	35.9826	32.2155	30.4261	27.253	28.9893	29.0661	26.8777	23.3314	22.604
Indonesia	6661.55	7118.85	6491.48	6048.93	5291.72	5515.4	5857.7	5912.95	5434.78	5064.75
Iran	8775.18	7850.45	6456.31	6823.16	5594.43	5116.08	5634.23	6410.93	5462.52	5204.08
Iraq	936.212	873.741	715.305	778.522	702.953	670.688	667.49	618.226	528.831	518.447
Ireland	0.43334	0.43023	0.42373	0.50241	0.44578	0.48163	0.47028	0.44477	0.4623	0.44992
Israel	2.74672	2.53584	2.3998	2.48793	2.19846	2.36553	2.21256	2.06619	1.95694	1.88717
Italy	0.46549	0.46517	0.43437	0.50241	0.44507	0.47458	0.46011	0.43496	0.4506	0.43907
Japan	70.4337	67.4244	55.2056	58.409	50.8671	51.6729	63.8725	63.8905	62.7433	54.8017
Jordan	0.512	0.49302	0.44309	0.47244	0.43331	0.421	0.40726	0.3748	0.32756	0.32047
Kazakhstan	99.4178	92.1004	93.8901	98.0505	86.021	84.519	82.6208	86.3498	86.7965	113.535
Kenya	58.1384	52.3241	47.789	52.722	49.512	43.7535	42.7608	38.6763	35.1043	33.1412
Kuwait	0.20697	0.19573	0.17871	0.19071	0.16723	0.16692	0.16697	0.15416	0.13672	0.12916
Kyrgyzstan	32.3091	28.1168	27.5281	30.5848	25.1788	25.365	24.8641	24.252	23.7011	24.8464
Latvia	0.36573	0.32783	0.29722	0.35298	0.30519	0.33083	0.32476	0.43519	0.4501	0.43746
Lebanon	990.906	1056.56	931.606	1003.1	913.349	869.801	835.719	785.457	706.967	691.854
Libya	0.8842	0.85841	0.7658	0.84293	0.67362	0.66476	0.66222			
Lithuania	1.78482	1.6615	1.49566	1.73426	1.5146	1.61541	1.56971	1.48441	0.4499	0.43391
Luxembourg	0.46719	0.46677	0.43751	0.50241	0.44219	0.47324	0.45649	0.42988	0.4434	0.43023
Macedonia	29.4132	28.0983	26.6029	30.9315	27.0595	28.7979	27.5252	26.1608	27.1867	26.5448
Malaysia	2.23387	2.27308	2.13032	2.14332	1.88484	1.9008	1.92594	1.83597	1.85931	1.877
Mexico	7.59043	8.13034	8.36447	8.40804	7.63692	7.8966	7.48135	7.08796	7.12727	7.92364
Moldova	8.85856	7.42638	7.08749	8.23054	6.93416	6.94332	6.99284	7.02621	7.44105	7.18801

Morocco	5.22024	5.26509	4.83537	5.6008	5.09549	5.44941	5.28363	4.98189	4.93628	4.73513
Netherlands	0.46229	0.46599	0.43324	0.50241	0.44681	0.47916	0.45872	0.43049	0.44348	0.43023
New Zealand	0.89023	0.98996	0.97325	0.92347	0.77048	0.75628	0.74794	0.69382	0.71265	0.68554
Nigeria	107.264	100.154	100.629	100.009	88.2394	81.7416	76.3245	67.4108	65.0187	71.8534
Norway	3.83346	3.93012	3.82663	4.02181	3.51693	3.68109	3.69114	3.67457	3.98708	3.89302
Oman	0.2785	0.27471	0.23582	0.25585	0.23486	0.23176	0.23213	0.2176	0.18839	0.18087
Pakistan	56.9639	60.6953	55.3002	56.6882	49.0417	49.1139	50.3265	44.2258	37.9821	36.2254
Panama	0.69441	0.70593	0.61502	0.6654	0.60039	0.57684	0.56232	0.51878	0.44887	0.43247
Paraguay	3585.66	3120.23	3088.03	3150.99	2461.21	2545.11	2454.28	2285.16	2239.16	2274.89
Peru	2.08336	2.0357	1.817	1.87985	1.69361	1.58908	1.60553	1.54753	1.45215	1.44205
Philippines	32.5563	31.934	29.4085	30.0161	26.3102	25.2488	24.9871	23.7711	20.8091	20.7155
Poland	1.85551	1.71123	1.90441	2.00639	1.80647	1.94711	1.89675	1.79067	1.87229	1.91254
Portugal	0.45407	0.45723	0.43378	0.50241	0.44116	0.47163	0.46156	0.43861	0.45235	0.43757
Qatar	2.34197	2.25065	2.11068	2.42207	2.27033	2.26333	2.22551	2.04433	1.73832	1.64014
Romania	1.77461	1.87944	1.92256	2.11458	1.83188	2.04809	1.91654	1.80706	1.88354	1.88163
Russia	20.9816	19.7506	20.1549	20.2069	17.2246	17.4709	17.1347	18.1382	21.5972	21.5489
Saudi Arabia	2.74533	2.76454	2.34759	2.49526	2.25258	2.22339	2.17832	2.00901	1.70325	1.59699
Senegal	302.187	295.147	284.054	329.559	290.079	314.252	306.246	293.373	303.706	293.053
Serbia	45.4266	42.5933	42.6281	51.7211	41.9444	47.6092	43.396	41.7882	43.9468	43.1397
Singapore	1.00019	0.97463	0.88858	0.90728	0.75963	0.73325	0.72724	0.69032	0.65218	0.63934
Slovakia	15.9633	14.5964	0.43188	0.50241	0.44003	0.46664	0.45161	0.42828	0.4453	0.43563
Slovenia	0.47765	0.46704	0.43566	0.50241	0.44914	0.48099	0.46384	0.43867	0.45699	0.44499
South Africa	5.28744	6.14586	5.25004	4.87156	4.39587	4.77737	5.38751	5.40623	5.26468	5.54091
South Korea	619.829	776.445	781.145	769.246	677.244	684.077	665.577	598.493	553.087	545.457
Spain	0.465	0.46156	0.43548	0.50241	0.44311	0.47523	0.45989	0.43646	0.4546	0.44332
Sudan	1.74906	1.75394	1.54889	1.53442	1.38814	1.37476	1.42816	1.19129	0.92721	0.78756
Sweden	4.23934	4.41901	4.60111	4.79591	4.00904	4.21035	4.10695	4.10331	4.37243	4.26609
Switzerland	0.74228	0.72296	0.65117	0.69395	0.5632	0.60813	0.61093	0.57185	0.52644	0.52549
Tajikistan	2.83022	2.58861	2.61993	2.91378	2.60653	2.57033	2.49608	2.30861	2.36149	2.74916

Thailand	22.4527	22.7159	21.0367	21.0838	18.6713	18.7623	18.4058	18.0805	16.6663	16.6411
Tunisia	0.87549	0.88714	0.83787	0.95246	0.86426	0.92616	0.92341	0.87068	0.8312	0.85186
Turkmenistan	3647.77	3521.02	8829.76	9481.99	8604.83	8297.04	8121.6	7036.14	6236.46	6558.97
UAE	2.54437	2.50613	2.20164	2.44369	2.31421	2.33463	2.34176	2.16659	1.8036	1.72279
UK	0.32919	0.38233	0.39401	0.43064	0.37972	0.38038	0.38006	0.337	0.31428	0.34298
Ukraine	4.82958	4.44731	5.06434	5.2804	4.69131	4.75178	4.83323	6.0666	6.49431	6.47378
Uruguay	17.4244	15.9421	14.3069	13.3475	11.3582	11.2209	10.5685	10.4319	9.77692	9.55364
USA	0.63356	0.67459	0.60402	0.6654	0.61622	0.6131	0.61275	0.57096	0.49405	0.47358
Uzbekistan	1108.89	1103.54	973.597	1056.21	960.228	970.801	990.322	952.48	840.055	876.878
Venezuela	2.44688	2.32958	1.63554	1.71811	2.1624	1.81382	1.84409	1.11883	0.43713	0.17609
Yemen	167.108	155.925	134.017	146.116	113.688	105.337	96.5042	84.5293	69.2295	54.2324

9.11. Democracy Index

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	3.06	3.02	2.75	2.48	2.48	2.48	2.48	2.77	2.77	2.55
Albania	5.91	5.91	5.885	5.86	5.81	5.67	5.67	5.67	5.91	5.91
Algeria	3.17	3.32	3.38	3.44	3.44	3.83	3.83	3.83	3.95	3.56
Argentina	6.63	6.63	6.735	6.84	6.84	6.84	6.84	6.84	7.02	6.96
Armenia	4.15	4.09	4.09	4.09	4.09	4.09	4.02	4.13	4	3.88
Australia	9.09	9.22	9.22	9.22	9.22	9.22	9.13	9.01	9.01	9.01
Austria	8.69	8.49	8.49	8.49	8.49	8.62	8.48	8.54	8.54	8.41
Azerbaijan	3.31	3.19	3.17	3.15	3.15	3.15	3.06	2.83	2.71	2.65
Bahrain	3.53	3.38	3.435	3.49	2.92	2.52	2.87	2.87	2.79	2.79
Bangladesh	6.11	5.52	5.695	5.87	5.86	5.86	5.86	5.78	5.73	5.73
Belarus	3.34	3.34	3.34	3.34	3.16	3.04	3.04	3.69	3.62	3.54
Belgium	8.15	8.16	8.105	8.05	8.05	8.05	8.05	7.93	7.93	7.77
Bosnia	5.78	5.7	5.51	5.32	5.24	5.11	5.02	4.78	4.83	4.87
Brazil	7.38	7.38	7.25	7.12	7.12	7.12	7.12	7.38	6.96	6.9
Bulgaria	7.1	7.02	6.93	6.84	6.78	6.72	6.83	6.3	7.14	7.01
Canada	9.07	9.07	9.075	9.08	9.08	9.08	9.08	9.08	9.08	9.15
Chile	7.89	7.89	7.78	7.67	7.54	7.54	7.8	7.8	7.84	7.78
China	2.97	3.04	3.09	3.14	3.14	3	3	3	3.14	3.14
Colombia	6.4	6.54	6.545	6.55	6.63	6.63	6.55	6.55	6.62	6.67
Croatia	7.04	7.04	6.925	6.81	6.73	6.93	6.93	6.93	6.93	6.75
Czech Republic	8.17	8.19	8.19	8.19	8.19	8.19	8.06	7.94	7.94	7.82
Denmark	9.52	9.52	9.52	9.52	9.52	9.52	9.38	9.11	9.11	9.2
Dominican Republic	6.13	6.2	6.2	6.2	6.2	6.49	6.74	6.67	6.67	6.67
Ecuador	5.64	5.64	5.705	5.77	5.72	5.78	5.87	5.87	5.87	5.81
Egypt	3.9	3.89	3.48	3.07	3.95	4.56	3.27	3.16	3.18	3.31

Estonia	7.74	7.68	7.68	7.68	7.61	7.61	7.61	7.74	7.85	7.85
Finland	9.25	9.25	9.22	9.19	9.06	9.06	9.03	9.03	9.03	9.03
France	8.07	8.07	7.92	7.77	7.77	7.88	7.92	8.04	7.92	7.92
Georgia	4.9	4.62	4.605	4.59	4.74	5.53	5.95	5.82	5.88	5.93
Germany	8.82	8.82	8.6	8.38	8.34	8.34	8.31	8.64	8.64	8.63
Greece	8.13	8.13	8.025	7.92	7.65	7.65	7.65	7.45	7.45	7.23
Hungary	7.53	7.44	7.325	7.21	7.04	6.96	6.96	6.9	6.84	6.72
Iceland	9.71	9.65	9.65	9.65	9.65	9.65	9.65	9.58	9.58	9.5
India	7.68	7.8	7.54	7.28	7.3	7.52	7.69	7.92	7.74	7.81
Indonesia	6.41	6.34	6.435	6.53	6.53	6.76	6.82	6.95	7.03	6.97
Iran	2.93	2.83	2.385	1.94	1.98	1.98	1.98	1.98	2.16	2.34
Iraq	4.01	4	4	4	4.03	4.1	4.1	4.23	4.08	4.08
Ireland	9.01	9.01	8.9	8.79	8.56	8.56	8.68	8.72	8.85	9.15
Israel	7.28	7.48	7.48	7.48	7.53	7.53	7.53	7.63	7.77	7.85
Italy	7.73	7.98	7.905	7.83	7.74	7.74	7.85	7.85	7.98	7.98
Japan	8.15	8.25	8.165	8.08	8.08	8.08	8.08	8.08	7.96	7.99
Jordan	3.92	3.93	3.835	3.74	3.89	3.76	3.76	3.76	3.86	3.86
Kazakhstan	3.62	3.45	3.375	3.3	3.24	2.95	3.06	3.17	3.06	3.06
Kenya	5.08	4.79	4.75	4.71	4.71	4.71	5.13	5.13	5.33	5.33
Kuwait	3.09	3.39	3.635	3.88	3.74	3.78	3.78	3.78	3.85	3.85
Kyrgyzstan	4.08	4.05	4.18	4.31	4.34	4.69	4.69	5.24	5.33	4.93
Latvia	7.37	7.23	7.14	7.05	7.05	7.05	7.05	7.48	7.37	7.31
Lebanon	5.82	5.62	5.72	5.82	5.32	5.05	5.05	5.12	4.86	4.86
Libya	1.84	2	1.97	1.94	3.55	5.15	4.82	3.8	2.25	2.25
Lithuania	7.43	7.36	7.3	7.24	7.24	7.24	7.54	7.54	7.54	7.47
Luxembourg	9.1	9.1	8.99	8.88	8.88	8.88	8.88	8.88	8.88	8.81
Macedonia	6.33	6.21	6.185	6.16	6.16	6.16	6.16	6.25	6.02	5.23
Malaysia	5.98	6.36	6.275	6.19	6.19	6.41	6.49	6.49	6.43	6.54
Mexico	6.67	6.78	6.855	6.93	6.93	6.9	6.91	6.68	6.55	6.47

Moldova	6.5	6.5	6.415	6.33	6.32	6.32	6.32	6.32	6.35	6.01
Morocco	3.9	3.88	3.835	3.79	3.83	4.07	4.07	4	4.66	4.77
Netherlands	9.66	9.53	9.26	8.99	8.99	8.99	8.84	8.92	8.92	8.8
New Zealand	9.01	9.19	9.225	9.26	9.26	9.26	9.26	9.26	9.26	9.26
Nigeria	3.52	3.53	3.5	3.47	3.83	3.77	3.77	3.76	4.62	4.5
Norway	9.55	9.68	9.74	9.8	9.8	9.93	9.93	9.93	9.93	9.93
Oman	2.77	2.98	2.92	2.86	3.26	3.26	3.26	3.15	3.04	3.04
Pakistan	3.92	4.46	4.505	4.55	4.55	4.57	4.64	4.64	4.4	4.33
Panama	7.35	7.35	7.25	7.15	7.08	7.08	7.08	7.08	7.19	7.13
Paraguay	6.16	6.4	6.4	6.4	6.4	6.26	6.26	6.26	6.33	6.27
Peru	6.11	6.31	6.355	6.4	6.59	6.47	6.54	6.54	6.58	6.65
Philippines	6.48	6.12	6.12	6.12	6.12	6.3	6.41	6.77	6.84	6.94
Poland	7.3	7.3	7.175	7.05	7.12	7.12	7.12	7.47	7.09	6.83
Portugal	8.16	8.05	8.035	8.02	7.81	7.92	7.65	7.79	7.79	7.86
Qatar	2.78	2.92	3.005	3.09	3.18	3.18	3.18	3.18	3.18	3.18
Romania	7.07	7.06	6.83	6.6	6.54	6.54	6.54	6.68	6.68	6.62
Russia	5.02	4.48	4.37	4.26	3.92	3.74	3.59	3.39	3.31	3.24
Saudi Arabia	1.92	1.9	1.87	1.84	1.77	1.71	1.82	1.82	1.93	1.93
Senegal	5.37	5.37	5.32	5.27	5.51	6.09	6.15	6.15	6.08	6.21
Serbia	6.62	6.49	6.41	6.33	6.33	6.33	6.67	6.71	6.71	6.57
Singapore	5.89	5.89	5.89	5.89	5.89	5.88	5.92	6.03	6.14	6.38
Slovakia	7.4	7.33	7.34	7.35	7.35	7.35	7.35	7.35	7.29	7.29
Slovenia	7.96	7.96	7.825	7.69	7.76	7.88	7.88	7.57	7.57	7.51
South Africa	7.91	7.91	7.85	7.79	7.79	7.79	7.9	7.82	7.56	7.41
South Korea	7.88	8.01	8.06	8.11	8.06	8.13	8.06	8.06	7.97	7.92
Spain	8.34	8.45	8.305	8.16	8.02	8.02	8.02	8.05	8.3	8.3
Sudan	2.9	2.81	2.615	2.42	2.38	2.38	2.54	2.54	2.37	2.37
Sweden	9.88	9.88	9.69	9.5	9.5	9.73	9.73	9.73	9.45	9.39
Switzerland	9.02	9.15	9.12	9.09	9.09	9.09	9.09	9.09	9.09	9.09

Tajikistan	2.45	2.45	2.48	2.51	2.51	2.51	2.51	2.37	1.95	1.89
Thailand	5.67	6.81	6.68	6.55	6.55	6.55	6.25	5.39	5.09	4.92
Tunisia	3.06	2.96	2.875	2.79	5.53	5.67	5.76	6.31	6.72	6.4
Turkmenistan	1.83	1.72	1.72	1.72	1.72	1.72	1.72	1.83	1.83	1.83
UAE	2.42	2.6	2.56	2.52	2.58	2.58	2.52	2.64	2.75	2.75
UK	8.08	8.15	8.155	8.16	8.16	8.21	8.31	8.31	8.31	8.36
Ukraine	6.94	6.94	6.62	6.3	5.94	5.91	5.84	5.42	5.7	5.7
Uruguay	7.96	8.08	8.09	8.1	8.17	8.17	8.17	8.17	8.17	8.17
USA	8.22	8.22	8.2	8.18	8.11	8.11	8.11	8.11	8.05	7.98
Uzbekistan	1.85	1.74	1.74	1.74	1.74	1.72	1.72	2.45	1.95	1.95
Venezuela	5.42	5.34	5.26	5.18	5.08	5.15	5.07	5.07	5	4.68
Yemen	2.98	2.95	2.795	2.64	2.57	3.12	2.79	2.79	2.24	2.07

9.12. Terror Attacks

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	340	415	502	541	421	1468	1441	1821	1927	1615
Albania	0	0	1	0	0	0	1	2	4	2
Algeria	124	107	108	100	15	41	22	13	16	9
Argentina	0	0	1	5	1	2	2	0	1	2
Armenia	1	0	1	0	0	0	1	0	2	2
Australia	0	3	1	1	0	0	1	8	14	9
Austria	1	7	3	0	1	0	1	0	0	3
Azerbaijan	1	2	2	0	0	0	0	3	0	2
Bahrain	0	1	0	2	1	26	52	42	18	3
Bangladesh	9	19	27	22	13	18	139	130	469	88
Belarus	0	1	0	2	1	3	0	0	0	0
Belgium	1	0	1	0	0	1	0	2	0	6
Bosnia	2	4	1	1	1	0	1	3	6	0
Brazil	0	0	0	0	0	1	3	3	5	1
Bulgaria	0	2	0	0	2	2	3	1	2	1
Canada	0	5	4	2	0	3	4	3	5	6
Chile	8	4	8	5	6	2	4	17	1	17
China	0	20	7	1	4	4	12	37	17	5
Colombia	30	133	139	136	94	115	148	231	135	85
Croatia	0	2	1	0	0	0	2	0	0	0
Czech Republic	0	2	1	0	1	0	1	5	4	2
Denmark	0	1	0	1	0	0	1	0	4	1
Dominican Republic	0	0	0	0	0	0	1	1	0	0
Ecuador	0	2	1	0	1	1	2	0	1	2
Egypt	0	1	2	2	18	49	315	347	582	365
Estonia	0	0	0	0	1	0	0	0	2	0

Finland	1	1	0	0	0	0	0	0	9	3
France	16	13	9	3	8	65	12	14	36	26
Georgia	0	33	25	7	3	3	2	2	1	4
Germany	3	3	4	1	8	4	0	13	64	41
Greece	15	53	115	49	11	22	53	26	31	31
Hungary	0	2	1	0	0	0	0	1	1	1
Iceland	0	0	0	0	0	1	0	1	0	0
India	149	533	672	661	644	611	694	860	883	1019
Indonesia	2	13	19	4	21	39	32	35	29	19
Iran	9	8	15	14	13	5	11	9	9	10
Iraq	1047	1105	1137	1179	1308	1437	2849	3926	2744	3356
Ireland	1	5	0	4	4	29	27	33	28	15
Israel	53	134	36	14	51	65	37	293	58	50
Italy	0	2	4	10	3	10	7	7	5	11
Japan	0	3	1	0	0	0	0	5	10	1
Jordan	0	0	0	2	0	2	1	3	4	9
Kazakhstan	0	1	0	0	5	4	4	0	0	3
Kenya	12	11	1	12	42	80	79	115	68	65
Kuwait	0	0	0	0	1	0	0	0	1	2
Kyrgyzstan	1	0	0	1	1	0	0	2	2	4
Latvia	1	0	0	0	0	0	0	0	0	0
Lebanon	18	58	14	5	10	15	121	204	44	41
Libya	1	1	0	0	2	57	291	727	543	417
Lithuania	0	0	0	0	0	0	0	0	0	0
Luxembourg	0	0	0	0	0	0	0	0	0	0
Macedonia	1	9	1	0	0	1	0	3	4	0
Malaysia	0	2	1	0	0	2	13	12	5	19
Mexico	10	8	1	5	2	16	8	5	19	5
Moldova	0	0	1	0	0	1	0	0	0	1

Morocco	6	0	0	0	1	0	0	0	1	0
Netherlands	0	1	1	1	2	0	0	1	3	6
New Zealand	0	5	0	0	0	0	0	1	0	1
Nigeria	61	76	42	63	175	616	345	713	637	531
Norway	0	0	0	1	3	0	0	0	0	0
Oman	0	0	0	0	0	0	0	0	0	0
Pakistan	260	567	667	713	1012	1652	2214	2148	1238	861
Panama	0	0	1	0	0	0	0	0	0	1
Paraguay	0	0	0	2	4	4	10	15	19	15
Peru	4	1	4	0	0	6	10	12	10	3
Philippines	65	275	230	205	149	248	651	596	720	633
Poland	0	0	0	0	0	0	0	0	0	2
Portugal	0	0	0	0	2	0	0	0	0	0
Qatar	0	0	0	0	0	0	0	0	1	0
Romania	0	1	0	0	0	0	0	0	0	0
Russia	51	170	152	251	188	151	144	48	21	54
Saudi Arabia	1	0	3	0	2	6	6	14	103	124
Senegal	1	2	3	1	4	12	3	2	2	0
Serbia	0	4	3	1	0	3	0	0	0	0
Singapore	0	0	0	0	0	0	0	0	0	0
Slovakia	0	0	0	0	0	0	0	0	0	1
Slovenia	0	0	0	0	0	0	0	0	0	0
South Africa	2	1	0	0	0	4	13	20	5	27
South Korea	0	0	0	0	0	0	0	0	1	1
Spain	10	37	21	3	0	1	5	4	1	3
Sudan	23	32	26	28	38	40	46	157	158	173
Sweden	0	1	1	3	1	2	0	5	36	16
Switzerland	2	0	0	0	3	0	2	0	0	1
Tajikistan	1	0	1	1	0	5	0	1	3	1

Thailand	292	200	298	253	182	279	472	423	277	329
Tunisia	1	2	0	0	3	1	29	23	17	12
Turkmenistan	0	0	0	0	0	0	0	1	0	0
UAE	0	0	0	2	0	0	1	2	0	0
UK	20	39	22	57	47	54	137	103	114	104
Ukraine	1	1	2	4	3	8	5	898	637	60
Uruguay	0	0	0	0	0	0	0	0	0	1
USA	9	18	10	17	10	19	20	26	39	61
Uzbekistan	0	0	2	0	0	0	0	0	1	0
Venezuela	2	1	3	0	0	1	0	4	3	6
Yemen	7	22	23	112	118	312	424	761	658	521

9.13. Terror Index

Country/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	3.24737	3.75566	4.41513	4.58863	3.21865	8.8862	5.05792	4.63831	7.02259	4.81228
Albania	0	0	0.0088	0	0	0	0.00351	0.00509	0.01458	0.00596
Algeria	1.18434	0.96833	0.94987	0.84818	0.11468	0.24818	0.07722	0.03311	0.05831	0.02682
Argentina	0	0	0.0088	0.04241	0.00765	0.01211	0.00702	0	0.00364	0.00596
Armenia	0.00955	0	0.0088	0	0	0	0.00351	0	0.00729	0.00596
Australia	0	0.02715	0.0088	0.00848	0	0	0.00351	0.02038	0.05102	0.02682
Austria	0.00955	0.06335	0.02639	0	0.00765	0	0.00351	0	0	0.00894
Azerbaijan	0.00955	0.0181	0.01759	0	0	0	0	0.00764	0	0.00596
Bahrain	0	0.00905	0	0.01696	0.00765	0.15738	0.18252	0.10698	0.0656	0.00894
Bangladesh	0.08596	0.17195	0.23747	0.1866	0.09939	0.10896	0.48789	0.33113	1.70918	0.26222
Belarus	0	0.00905	0	0.01696	0.00765	0.01816	0	0	0	0
Belgium	0.00955	0	0.0088	0	0	0.00605	0	0.00509	0	0.01788
Bosnia	0.0191	0.0362	0.0088	0.00848	0.00765	0	0.00351	0.00764	0.02187	0
Brazil	0	0	0	0	0	0.00605	0.01053	0.00764	0.01822	0.00298
Bulgaria	0	0.0181	0	0	0.01529	0.01211	0.01053	0.00255	0.00729	0.00298
Canada	0	0.04525	0.03518	0.01696	0	0.01816	0.01404	0.00764	0.01822	0.01788
Chile	0.07641	0.0362	0.07036	0.04241	0.04587	0.01211	0.01404	0.0433	0.00364	0.05066
China	0	0.181	0.06157	0.00848	0.03058	0.02421	0.04212	0.09424	0.06195	0.0149
Colombia	0.28653	1.20362	1.22252	1.15352	0.71865	0.69613	0.51948	0.58839	0.49198	0.25328
Croatia	0	0.0181	0.0088	0	0	0	0.00702	0	0	0
Czech Republic	0	0.0181	0.0088	0	0.00765	0	0.00351	0.01274	0.01458	0.00596
Denmark	0	0.00905	0	0.00848	0	0	0.00351	0	0.01458	0.00298
Dominican Republic	0	0	0	0	0	0	0.00351	0.00255	0	0
Ecuador	0	0.0181	0.0088	0	0.00765	0.00605	0.00702	0	0.00364	0.00596
Egypt	0	0.00905	0.01759	0.01696	0.13761	0.29661	1.10565	0.88385	2.12099	1.0876

Estonia	0	0	0	0	0.00765	0	0	0	0.00729	0
Finland	0.00955	0.00905	0	0	0	0	0	0	0.0328	0.00894
France	0.15282	0.11765	0.07916	0.02545	0.06116	0.39346	0.04212	0.03566	0.1312	0.07747
Georgia	0	0.29864	0.21988	0.05937	0.02294	0.01816	0.00702	0.00509	0.00364	0.01192
Germany	0.02865	0.02715	0.03518	0.00848	0.06116	0.02421	0	0.03311	0.23324	0.12217
Greece	0.14327	0.47964	1.01143	0.41561	0.0841	0.13317	0.18603	0.06623	0.11297	0.09237
Hungary	0	0.0181	0.0088	0	0	0	0	0.00255	0.00364	0.00298
Iceland	0	0	0	0	0	0.00605	0	0.00255	0	0
India	1.42311	4.82353	5.91029	5.60645	4.92355	3.69855	2.43594	2.19052	3.21793	3.03635
Indonesia	0.0191	0.11765	0.16711	0.03393	0.16055	0.23608	0.11232	0.08915	0.10569	0.05662
Iran	0.08596	0.0724	0.13193	0.11874	0.09939	0.03027	0.03861	0.02292	0.0328	0.0298
Iraq	10	10	10	10	10	8.69855	10	10	10	10
Ireland	0.00955	0.04525	0	0.03393	0.03058	0.17554	0.09477	0.08406	0.10204	0.0447
Israel	0.50621	1.21267	0.31662	0.11874	0.38991	0.39346	0.12987	0.74631	0.21137	0.14899
Italy	0	0.0181	0.03518	0.08482	0.02294	0.06053	0.02457	0.01783	0.01822	0.03278
Japan	0	0.02715	0.0088	0	0	0	0	0.01274	0.03644	0.00298
Jordan	0	0	0	0.01696	0	0.01211	0.00351	0.00764	0.01458	0.02682
Kazakhstan	0	0.00905	0	0	0.03823	0.02421	0.01404	0	0	0.00894
Kenya	0.11461	0.09955	0.0088	0.10178	0.3211	0.48426	0.27729	0.29292	0.24781	0.19368
Kuwait	0	0	0	0	0.00765	0	0	0	0.00364	0.00596
Kyrgyzstan	0.00955	0	0	0.00848	0.00765	0	0	0.00509	0.00729	0.01192
Latvia	0.00955	0	0	0	0	0	0	0	0	0
Lebanon	0.17192	0.52489	0.12313	0.04241	0.07645	0.0908	0.42471	0.51961	0.16035	0.12217
Libya	0.00955	0.00905	0	0	0.01529	0.34504	1.02141	1.85176	1.97886	1.24255
Lithuania	0	0	0	0	0	0	0	0	0	0
Luxembourg	0	0	0	0	0	0	0	0	0	0
Macedonia	0.00955	0.08145	0.0088	0	0	0.00605	0	0.00764	0.01458	0
Malaysia	0	0.0181	0.0088	0	0	0.01211	0.04563	0.03057	0.01822	0.05662
Mexico	0.09551	0.0724	0.0088	0.04241	0.01529	0.09685	0.02808	0.01274	0.06924	0.0149

Moldova	0	0	0.0088	0	0	0.00605	0	0	0	0.00298
Morocco	0.05731	0	0	0	0.00765	0	0	0	0.00364	0
Netherlands	0	0.00905	0.0088	0.00848	0.01529	0	0	0.00255	0.01093	0.01788
New Zealand	0	0.04525	0	0	0	0	0	0.00255	0	0.00298
Nigeria	0.58262	0.68778	0.36939	0.53435	1.33792	3.72881	1.21095	1.8161	2.32143	1.58224
Norway	0	0	0	0.00848	0.02294	0	0	0	0	0
Oman	0	0	0	0	0	0	0	0	0	0
Pakistan	2.48329	5.13122	5.86631	6.0475	7.737	10	7.77115	5.47122	4.51166	2.56555
Panama	0	0	0.0088	0	0	0	0	0	0	0.00298
Paraguay	0	0	0	0.01696	0.03058	0.02421	0.0351	0.03821	0.06924	0.0447
Peru	0.0382	0.00905	0.03518	0	0	0.03632	0.0351	0.03057	0.03644	0.00894
Philippines	0.62082	2.48869	2.02287	1.73876	1.13914	1.50121	2.28501	1.51808	2.62391	1.88617
Poland	0	0	0	0	0	0	0	0	0	0.00596
Portugal	0	0	0	0	0.01529	0	0	0	0	0
Qatar	0	0	0	0	0	0	0	0	0.00364	0
Romania	0	0.00905	0	0	0	0	0	0	0	0
Russia	0.48711	1.53846	1.33685	2.12892	1.43731	0.91404	0.50544	0.12226	0.07653	0.16091
Saudi Arabia	0.00955	0	0.02639	0	0.01529	0.03632	0.02106	0.03566	0.37536	0.36949
Senegal	0.00955	0.0181	0.02639	0.00848	0.03058	0.07264	0.01053	0.00509	0.00729	0
Serbia	0	0.0362	0.02639	0.00848	0	0.01816	0	0	0	0
Singapore	0	0	0	0	0	0	0	0	0	0
Slovakia	0	0	0	0	0	0	0	0	0	0.00298
Slovenia	0	0	0	0	0	0	0	0	0	0
South Africa	0.0191	0.00905	0	0	0	0.02421	0.04563	0.05094	0.01822	0.08045
South Korea	0	0	0	0	0	0	0	0	0.00364	0.00298
Spain	0.09551	0.33484	0.1847	0.02545	0	0.00605	0.01755	0.01019	0.00364	0.00894
Sudan	0.21968	0.28959	0.22867	0.23749	0.29052	0.24213	0.16146	0.3999	0.5758	0.51549
Sweden	0	0.00905	0.0088	0.02545	0.00765	0.01211	0	0.01274	0.1312	0.04768
Switzerland	0.0191	0	0	0	0.02294	0	0.00702	0	0	0.00298

Tajikistan	0.00955	0	0.0088	0.00848	0	0.03027	0	0.00255	0.01093	0.00298
Thailand	2.78892	1.80995	2.62093	2.14589	1.39144	1.68886	1.65672	1.07743	1.00948	0.98033
Tunisia	0.00955	0.0181	0	0	0.02294	0.00605	0.10179	0.05858	0.06195	0.03576
Turkmenistan	0	0	0	0	0	0	0	0.00255	0	0
UAE	0	0	0	0.01696	0	0	0.00351	0.00509	0	0
UK	0.19102	0.35294	0.19349	0.48346	0.35933	0.32688	0.48087	0.26235	0.41545	0.30989
Ukraine	0.00955	0.00905	0.01759	0.03393	0.02294	0.04843	0.01755	2.28732	2.32143	0.17878
Uruguay	0	0	0	0	0	0	0	0	0	0.00298
USA	0.08596	0.1629	0.08795	0.14419	0.07645	0.11501	0.0702	0.06623	0.14213	0.18176
Uzbekistan	0	0	0.01759	0	0	0	0	0	0.00364	0
Venezuela	0.0191	0.00905	0.02639	0	0	0.00605	0	0.01019	0.01093	0.01788
Yemen	0.06686	0.1991	0.20229	0.94996	0.90214	1.88862	1.48824	1.93836	2.39796	1.55244